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United States  
Department of  
Agriculture

Science and  
Education

Program Aid 1310

# Career Opportunities With The Agricultural Research Service

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| GENERAL SCHEDULE — 5 U.S.C. 5332(a) |          |          |          |          |          |  |          |          |          |          |
|-------------------------------------|----------|----------|----------|----------|----------|--|----------|----------|----------|----------|
| GS                                  | 1        | 2        | 3        | 4        | 5        | 6  | 7        | 8        | 9        | 10       |
| 1                                   | \$ 8,342 | \$ 8,620 | \$ 8,898 | \$ 9,175 | \$ 9,453 | \$ 9,615                                     | \$ 9,890 | \$10,165 | \$10,178 | \$10,439 |
| 2                                   | 9,381    | 9,603    | 9,913    | 10,178   | 10,292   | 10,595                                       | 10,898   | 11,201   | 11,504   | 11,807   |
| 3                                   | 10,235   | 10,576   | 10,917   | 11,258   | 11,599   | 11,940                                       | 12,281   | 12,622   | 12,963   | 13,304   |
| 4                                   | 11,490   | 11,873   | 12,256   | 12,639   | 13,022   | 13,405                                       | 13,788   | 14,171   | 14,554   | 14,937   |
| 5                                   | 12,854   | 13,282   | 13,710   | 14,138   | 14,566   | 14,994                                       | 15,422   | 15,850   | 16,278   | 16,706   |
| 6                                   | 14,328   | 14,806   | 15,284   | 15,762   | 16,240   | 16,718                                       | 17,196   | 17,674   | 18,152   | 18,630   |
| 7                                   | 15,922   | 16,453   | 16,984   | 17,515   | 18,046   | 18,577                                       | 19,108   | 19,639   | 20,170   | 20,701   |
| 8                                   | 17,634   | 18,222   | 18,810   | 19,398   | 19,986   | 20,574                                       | 21,162   | 21,750   | 22,338   | 22,926   |
| 9                                   | 19,477   | 20,126   | 20,775   | 21,424   | 22,073   | 22,722                                       | 23,371   | 24,020   | 24,669   | 25,318   |
| 10                                  | 21,449   | 22,164   | 22,879   | 23,594   | 24,309   | 25,024                                       | 25,739   | 26,454   | 27,169   | 27,884   |
| 11                                  | 23,566   | 24,352   | 25,138   | 25,924   | 26,710   | 27,496                                       | 28,282   | 29,068   | 29,854   | 30,640   |
| 12                                  | 28,245   | 29,187   | 30,129   | 31,071   | 32,013   | 32,955                                       | 33,897   | 34,839   | 35,781   | 36,723   |
| 13                                  | 33,586   | 34,706   | 35,826   | 36,946   | 38,066   | 39,186                                       | 40,306   | 41,426   | 42,546   | 43,666   |
| 14                                  | 39,689   | 41,012   | 42,335   | 43,658   | 44,981   | 46,304                                       | 47,627   | 48,950   | 50,273*  | 51,596*  |
| 15                                  | 46,685   | 48,241   | 49,797   | 51,353*  | 52,909*  | 54,465*                                      | 56,021*  | 57,577*  | 59,133*  | 60,689*  |
| 16                                  | 54,755*  | 56,580*  | 58,405*  | 60,230*  | 62,055*  | 63,880*                                      | 65,705*  | 67,530*  | 69,355*  |          |
| 17                                  | 64,142*  | 66,280*  | 68,418*  | 70,556*  | 72,694*  | GENERAL SCHEDULE — EFFECTIVE OCTOBER 4, 1981 |          |          |          |          |
| 18                                  | 75,177*  |          |          |          |          | USDA — OFFICE OF PERSONNEL                   |          |          |          |          |

\*The salary for employees at these rates is limited by 5 U.S.C. 5308 to the rate for Level V of the Executive Schedule which, pursuant to P.L. 97-51, will be ~~\$50,112.50~~.

57,500

## An Equal Opportunity Employer

All appointments and promotions to positions in the Agricultural Research Service (ARS), U.S. Department of Agriculture (USDA), are based on competitive principles. This policy insures that all persons who are qualified have an equal chance to obtain a position. Selections and promotions are based on merit, without regard to race, color, sex, marital status, creed, age, nondisqualifying physical handicap, national origin, political affiliation, or any other nonmerit consideration.

Qualifications for positions with ARS are determined by educational background, previous work experience and, when appropriate, scores on examinations administered by the U.S. Office of Personnel Management or the employing agency. Examinations for some positions involve a written test.

The Agricultural Research Service is committed to improving the status of women and minorities in Government today. It needs and wants more qualified women and minorities in the ARS work force and is actively seeking such candidates to fill professional positions. Opportunities for entry into these positions have never been greater. There are promotion and development opportunities to further encourage advancement. We are striving for equality of opportunity through our Affirmative Action Programs, which include the Federal Women's Program, the Hispanic Employment Program, and the Upward Mobility Program.

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## Foreword

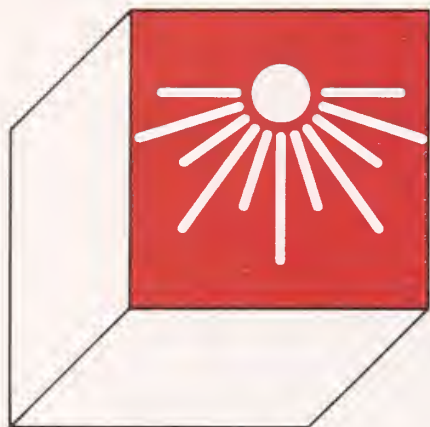
This booklet presents information about Federal careers and obtaining Federal employment within the U.S. Department of Agriculture, Agricultural Research Service (ARS). For the student, the booklet is intended as a reference for investigating the variety of career choices, particularly within agriculture, offered in today's Federal service.



Prepared by  
Science and  
Education  
Management Staff

March 1982





## Federal Job Information And The Hiring Process

Positions in the Federal *career* service and, thus, in the Agricultural Research Service, are filled through the competitive merit system. Appointments are based on the applicant's ability to do the work as demonstrated in competition with others.

For one part of the career-service hiring process, the U.S. Office of Personnel Management (OPM) operates a network of area offices located in population centers throughout the country. These offices announce job opportunities and process applications from the general public. They maintain applicant inventories and eligibility lists and refer the best qualified candidates to Federal agencies who are seeking new employees. Announcements typically give brief descriptions of the jobs available and

their locations and pay rates; and explain the experience or education needed, and whether a written test is required.

Federal Job Information Centers (FJIC's) of OPM are local offices that offer an information service on Federal employment opportunities, particularly in the immediate vicinity. For answers to your questions about Federal job opportunities, visit or write the Federal Job Information Center nearest you.

For the second part of the career system, individual agencies of the Federal Government may announce certain job opportunities and accept and process applications from the general public. Special examining units provide those services. ARS currently does its own hiring in the following fields:

1. Specialized USDA life science positions that are professional research positions, grades GS-9 through GS-15. These positions are advertised in a monthly vacancy listing which is mailed to most universities and all Federal Job Information Centers. Because of the cost involved, individual names cannot be added to the mailing list. Candidates must submit a separate, complete application for each vacancy for which they wish to apply.

Inquiries on such positions should be directed to USDA Service and Education Management Staff (SEMS), Personnel Division, Special Examining Unit, Federal Building, Room 555, Hyattsville, Maryland 20782.

2. All senior-level positions (mostly managerial or technical staff positions at GS-13, 14, and 15) in ARS and three other closely related USDA organizations; positions for Biological Aids, Biological Technicians, Biological Laboratory Technicians, or Agricultural Research Technicians (GS-4, 5, 6, 7, 8, and 9) in ARS in Washington,

D.C., West Virginia, Delaware, Maryland, New York (except Orient Point) and Pennsylvania (except Philadelphia); and positions for Nutritionist in ARS, GS-5 through 12. Positions are advertised on individual announcements sent to offices or organizations and will be posted at appropriate Federal Job Information Centers for varying lengths of time.

Inquiries should be directed to USDA, SEMS, Administrative Operations Division, Personnel Branch-Employment Section-SEU, Building 003, Beltsville, Maryland 20705.

The U.S. Office of Personnel Management and the Agricultural Research Service invite you to call or visit before writing a letter or filling out an application for a job. They have trained professionals to assist you in securing appropriate job announcements, application forms, and pamphlets to help applicants through the proper procedures. Federal Job Information Centers and the Agricultural Research Service offices are open to serve you Mondays through Fridays, except legal holidays.

There also are a few *temporary* and *excepted* service positions in the Federal Government. Because they fill a unique need or are not expected to last for a long time, these positions are not filled through the career competitive examining process administered by OPM. This booklet provides information on some of these types of positions, which frequently include special employment programs reserved for students. An important difference in the treatment of the career, versus the temporary or excepted service position is that ARS accepts all applications for the latter and selects successful candidates without going through the OPM or special examining units. The names and locations of offices that accept applications for such employment are listed on the last page of this booklet.

# for STARTERS

## FEDERAL GOVERNMENT jobs that require

- Six months of experience
- A high school diploma
- Up to 2 years of college, vocational training or specialized work experience

Office of  
Personnel Management  
Washington, D.C. 20415

BRE-78  
January 1979



***If you have***

- *at least 6 months of work experience,*
- *or a high school diploma,*
- *or up to 2 years of college, vocational training, or specialized work experience,*

***this pamphlet is for you.***

**White Collar or Blue Collar?**

You may be able to qualify for an aid, assistant, technician, or clerical job in a wide variety of white collar fields, including accounting, health, engineering, and administration. A sampling of these jobs is shown on the chart on the back of this pamphlet.

If you are mainly interested in blue collar work, you should know about trades helper, low skilled, and intermediate positions, in addition to apprenticeship programs which you may be able to qualify for.

**What Is an Aid?**

Aids work with professional and technical employees in a variety of fields. As an aid, you can learn basic techniques and simple terms. Specific duties vary according to the job, but most aid jobs include training which can lead to positions at higher grades.

**What Are Technicians and Assistants?**

Technicians and Assistants work directly with professionals in every field of science, technology, and business. Duties vary greatly, depending on the particular field, but technicians and assistants already have some knowledge and skill in the field before they are hired. In general, the professional does the theoretical work, while the technicians and assistants put theory into action.

**What Is an Apprentice?**

Apprenticeship is a means of formal training for skilled trades and crafts. Apprentices are given instruction on the job, supplemented by classwork, by a person who is experienced in that trade. They must learn both the skill and the theory behind it. An apprenticeship may vary from 2 to 6 years, with 4 years as the average.

**What's a Trades Helper?**

As a Trades Helper you provide assistance to skilled craftsmen in fields such as painting, woodworking, printing, etc. In most cases you would receive on-the-job training which would enable you to compete for higher-paying jobs.

**What About Other Blue Collar Jobs?**

Low-skilled positions, or support jobs, require ability to do simple tasks. Jobs like laundry worker, warehouseman, forklift operator, sales store worker, and animal caretaker are good examples of this type of work. You do not need skills and knowledges of a particular kind of work before being selected. Jobs that require you to have enough knowledge, skill, or ability in a particular line of work to do that work with only a limited amount of supervision are called intermediate or semi-skilled. Examples of these jobs are shown on the chart.

**What About Pay?**

Government jobs are classified by grade levels based on each job's difficulty and responsibility. The higher the grade, the higher the pay. The grade level for which you qualify depends on your education and experience which is related to the kind of work you want. Most white collar jobs are classified in the General Schedule (GS); grades range from GS-1 to GS-18. Most blue collar entry-level occupations are classified Wage Grade or WG.

Federal Government salaries for white collar jobs (GS pay scale) are the same nationwide, except that there are special higher salaries for certain hard-to-fill occupations, such as nursing, in some parts of the country. Wages for blue collar jobs are based on what private industry is paying for the same kind of work in your local area. GS and WG workers earn extra pay for overtime and night work.

**What Qualifies You for These Jobs?**

With 6 months of experience or a high school diploma you would generally qualify for white collar jobs at grade GS-2. A 1-year specialized college program, or 1 year of directly related work experience, qualifies you for a grade GS-3 clerical or aid position in the Federal Government.

If you have 2 years of college, or 2 years of related work experience, you could usually qualify for grade GS-4 positions of a clerical, assistant, or technician nature. A written test is required for some occupations at grades 2, 3, and 4.



You qualify for blue collar jobs based on the level of your skill rather than on years of education or experience. Your skill can be measured in a variety of ways—a test (a written test or a direct test of performance, such as operating a machine), a check of school performance, or a careful charting of the different degrees of skill reported by supervisors or someone else who has seen your work. Journeyman level jobs require advanced skill in a trade or craft.

People with less training or experience can usually qualify for low-skilled, semi-skilled or intermediate level, trades helper, or apprenticeship jobs. Many people apply for apprentice, trades helper, or low-skilled jobs because there are no specific education or experience requirements; so these jobs are very hard to get.

If you do have some education or experience (hobbies and volunteer work count, too) be sure to show it on your application. Your entry-level grade may be slightly higher, or at the very least you will have an edge over people who want the same job but have no education or experience.

If you have sufficient training, education, or experience closely related to the job for which you apply, you may be considered for a semi-skilled position like the ones shown on the chart. Opportunities for semi-skilled jobs are limited because the majority of blue collar occupations are filled at skilled levels.

### **What About Advancement?**

Your chances for advancement are good. Most Federal agencies fill vacancies by promoting their own employees. If you show initiative and competence, you may be promoted to a higher grade when there is an opening.

Career ladders for many of the white collar occupations shown on the chart provide an opportunity for you to advance several grades above your entry level. Supervisory jobs are higher in grade. With additional specialized experience, you may qualify for a professional job. So, don't hesitate to take a grade GS-2 or GS-3 aid job, even if you can qualify for GS-4. More experience just adds to your qualifications for getting that higher grade position you really want.

Blue collar apprentices become journeymen when they successfully complete the formal training program, within the time initially agreed upon, and demonstrate that they have learned all the skills necessary to perform the duties of the position without more than normal supervision;

otherwise they are released from the program. As a trades helper, you may advance to the skilled level in your own time, but advancement to journeyman in your entry occupation is not guaranteed. Low-skilled support jobs (WG-3 and 4) offer little opportunity for advancement, although you can go a little higher if you become a supervisor. However, many blue collar occupations have common elements, so you may be able to move from one low-skilled or trades helper job to another that offers more of a chance to get ahead. Semi-skilled craftsmen usually become journeymen when they have learned all the skills necessary to perform the work.

### **How Do You Apply?**

For most Federal Government jobs, you must apply through a local branch of the Office of Personnel Management.

Application procedures for both white collar and blue collar positions vary depending on where you want to work. Because Federal Government hiring needs also vary from one area to another, Office of Personnel Management offices accept applications only when they anticipate the need to fill jobs in a certain specialty. That's why you might be able to apply in one location for a particular kind of job and be unable to apply for the same kind of work in another location. Consequently, it is important to check with the Federal Job Information Center in the area where you work. (FJICs are listed under "U.S. Government" in the white pages of most major metropolitan area phone directories.)

FJICs can tell you what grades, salaries, and kinds of work you might be qualified for. If the OPM office where you want to work is accepting applications for a position in which you are interested and qualified, you send in your application, take a written test (if one is required for the particular job) and have your application evaluated. If you are qualified, your name will be placed on a list with other people qualified for the same kinds of jobs. When Government hiring officials have vacancies, they ask the Office of Personnel Management to refer the names of the best qualified candidates. Your chances of being hired depend on your qualifications, the numbers of vacancies and other qualified applicants, the grade or pay you say you will accept, and whether you are willing to work part-time as well as full-time (most fringe benefits are the same).

### **What Types of Jobs Are There?**

On the back is a list of positions in which the Federal Government has a large number of people currently employed. White collar jobs are shown first on the chart; the listings cover entry-level grades GS-2, 3, and 4 only. The Federal Government agencies that employ the greatest number of persons in each specialty are also listed. Opportunities for each specialty are described briefly. The job series code shown is an identifying number that is assigned to each occupation in the Federal Government.

Some "best-chance" occupations for blue collar workers are identified in the second section of the chart. The occupations listed are ones for which the Federal Government usually hires a number of semi-skilled applicants. Although people are employed in virtually all blue collar occupations, Government jobs below the journeyman level are hard to get. Apprenticeship programs or trades helper positions are not often available.

Remember that Federal occupations hiring needs vary greatly by location for both white collar and blue collar jobs. This chart shows the general employment outlook nationwide for a few of the vast assortment of Federal Government occupations.

NOTE: On January 1, 1979, the U.S. Civil Service Commission became the Office of Personnel Management.

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White Collar Occupations

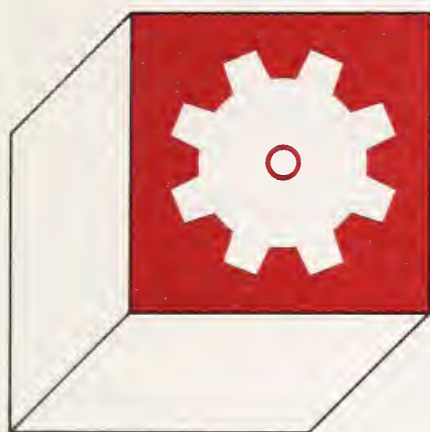
| JOB SERIES                                 | TYPE OF POSITION                 | MAJOR HIRING AGENCIES                                       | OPPORTUNITIES   |
|--|----------------------------------|---|---|
| Accounting and Budget                      |                                  |   |   |
| 520  | Accounts Maintenance Clerk       | Army, Navy, AF, DLA   | Sizable number of openings; many qualified applicants.                                |
| 525  | Accounting Technician            | Treasury, Army, Navy, AF                                    | More qualified candidates than positions.   |
| 530  | Cash Processing Clerk            | Treasury, Army, VA  | Many qualified people for few jobs.   |
| 592  | Tax Accounting Clerk             | Treasury only   | Best opportunities at GS-2 and 3 for moderate number of vacancies.                    |
| 540  | Voucher Examining                | Army, Navy, VA, DLA   | Limited number of positions; many qualified people.                                   |
| Biological Sciences                        |                                  |   |   |
| 404  | Biological Technician            | Agriculture, Interior, HEW, VA                              | Excess of qualified candidates for few jobs.  |
| 455  | Range Technician                 | Interior, Agriculture                                       | Extremenly competitive for minimal number of positions.                               |
| 462  | Forestry Technician              | Interior, Agriculture                                       | Few vacancies for many applicants.  |
| Engineering                                |                                  |   |   |
| 802  | Engineering Technician           | Army, Navy, AF, Transportation, Interior, Agriculture, NASA | Well-qualified applicants needed depending on experience and loca-tion.               |
| 817  | Surveying Technician             | Agriculture, Army, Interior, Commerce                       | Substantial number of positions; few qualified candidates.                            |
| 818  | Drafting                         | Army, Navy, AF, Interior                                    | Limited vacancies, but qualified applicants needed.                                   |
| General Administrative and Office Services |                                  |   |   |
| 305  | Mail and File Clerk              | All agencies  | Frequent openings at GS-2 and 3; considerable number of applicants.                   |
| 312  | Clerk-Steno                      | All agencies  | Good opportunities in major metropolitan areas.                                       |
| 318  | Secretary                        | All agencies  | Seldom filled below GS-4; best chances in major metropolitan areas.                   |
| 322  | Clerk-Typist                     | All agencies  | Good chances in major metro areas.  |
| 335  | Computer Aid and Technician      | Army, Navy, AF, HEW, DoD, Treasury                          | Occasional vacancies, but many well-qualified people.                                 |
| 382  | Telephone Operating              | GSA, VA, Army, Navy   | Chances best at GS-2 and 3, but more qualified people than vacancies.                 |
| Legal                                      |                                  |   |   |
| 986  | Legal Clerk and Technician       | Justice, Army, Interior, HEW                                | Many more candidates than jobs.   |
| 998  | Claims Clerk                     | VA, HEW   | Good opportunities for qualified people.  |
| 962  | Contact Representative           | Treasury, VA, HEW   | Good chances at GS-4 for well-qualified applicants.                                   |
| Medical and Public Health                  |                                  |   |   |
| 621  | Nursing Assistant                | Army, Navy, AF, HEW, VA (largest employer)                  | Excellent opportunities; many jobs filled.  |
| 645  | Medical Technician               | Same as above   | More qualified candidates needed.   |
| 649  | Medical Machine Technician       | Same as above   | Excellent chances for qualified people.   |
| 675  | Medical Records Technician       | Same as above   | Scattered vacancies; few applicants.  |
| 661  | Pharmacy Technician              | Same as above   | More candidates needed; ample number of positions.                                    |
| 681  | Dental Assistant                 | Same as above   | Adequate number of candidates for few jobs.   |
| 699  | Health Aid and Technician        | Army, HEW, VA   | Chances are slightly better at GS-4 for scattered vacancies.                          |
| Personnel Management                       |                                  |   |   |
| 203  | Personnel Clerical and Assistant | Army, Navy, AF, OPM, VA, Agriculture, HEW, Treasury         | Limited number of jobs; considerable number of applicants.                            |
| 204  | Military Personnel Clerical      | Army, Navy, AF  | Large number of applicants; many openings.  |
| Physical Sciences                          |                                  |   |   |
| 1311                                       | Physical Science Technician      | Navy, Army, Interior, Agriculture                           | Few vacancies; insufficient number of applicants, but some jobs are very specialized. |
| 1316                                       | Hydrologic Technician            | Interior, Army  | Limited vacancies; considerable number of candidates.                                 |
| 1341                                       | Meteorological Technician        | Commerce, Navy  | Qualified people exceed number of positions available.                                |
| 1371                                       | Cartographic Technician          | Interior, DoD   | Shortage of well-qualified applicants for few jobs.                                   |
| Social Sciences                            |                                  |   |   |
| 189  | Recreation Aid and Assistant     | Army, AF, Interior  | Better opportunities at GS-2 and 3 for sporadic vacancies.                            |
| Supply                                     |                                  |   |   |
| 2005                                       | Supply Clerical and Technical    | Army, Navy, AF, VA, DLA                                     | Frequent openings; numerous applicants.   |
| 2091                                       | Sales Store Clerical             | Army, AF  | Best chances at GS-2 and 3; surplus of candidates.                                    |
| Miscellaneous                              |                                  |   |   |
| 026  | Park Technician                  | Army, Interior  | Supply is well in excess of demand for these jobs.                                    |
| 081  | Fire Protection and Prevention   | Army, Navy, AF, VA  | Better chances at GS-2 and 3 for moderate number of positions.                        |
| 083  | Police                           | Treasury, Navy, Interior, VA, GSA                           | Short supply of qualified applicants at GS-4.   |

Blue Collar Occupations

|      |                                     |  |  |
|------|-------------------------------------|--|--|
| 8602 | Aircraft Engine Repair              | Army, Navy, AF, Transportation                   | Limited number of jobs; limited number of applicants.                        |
| 8852 | Aircraft Mechanic                   | Same as above                                    | Few positions for ample number of candidates.                                |
| 2892 | Aircraft Systems Electrical         | Same as above                                    | Few vacancies for adequate number of people.                                 |
| 5415 | Air Conditioning Equipment Operator | Army, Navy, AF, GSA, VA, Smithsonian Institution | Need more well-qualified candidates for these very specialized jobs.         |
| 5402 | Boiler Plant Operator               | Army, Navy, AF, HEW, GSA, VA                     | Lack of well-qualified candidates for these very specialized jobs.           |
| 4607 | Carpenter                           | Army, Navy, AF, GSA, VA                          | Surplus of candidates for small number of vacancies.                         |
| 2805 | Electrician                         | Army, Navy, AF, VA, GSA                          | More applicants than jobs.   |
| 2614 | Electronics Mechanic                | Army, Navy, AF                                   | Adequate number of applicants for positions.                                 |
| 5313 | Elevator Mechanic                   | GSA, U.S. Capitol, HEW, Army, Navy               | Good opportunities in major metropolitan areas.                              |
| 4749 | Maintenance Mechanic                | Army, Navy, Interior, GSA, Transportation        | Inadequate number of well-qualified people for limited vacancies.            |
| 3414 | Machinist                           | Army, Navy, AF                                   | Shortage of well-qualified people for limited vacancies.                     |
| 4102 | Painter                             | Army, Navy, AF, VA, GSA                          | Supply of candidates greatly exceeds demand.                                 |
| 4204 | Pipefitter                          | Army, Navy, AF, VA, GSA, Transportation          | Adequate number of qualified people for few jobs.                            |
| 3806 | Sheet Metal Mechanic                | Army, Navy, AF, Transportation, VA               | Lack of well-qualified people for limited number of positions.               |
| 5705 | Tractor Operator                    | Army, Navy, AF, Interior, VA, Agriculture        | Ample candidates for scattered vacancies.                                    |
| 3703 | Welder                              | Army, Navy, AF, Transportation                   | Inadequate number of well-qualified people for moderate amount of positions. |







## Job Listing By College Major

This is a listing of the major fields of study which are considered valuable background for employment in the U.S. Department of Agriculture. Under each study field or major, we have listed the types of positions that apply. Specialization within the major may be necessary for certain positions. The listings are simply representative of the types of jobs available.

Positions that particularly apply to the Agricultural Research Service are indicated by an asterisk. Employment projections for ARS for the current year are contained in a slip sheet accompanying this booklet.

### Most College Majors

- \*Administrative Assistant/Officer
- \*Budget Analyst
- Computer Specialist
- Criminal Investigator
- Food Program Specialist
- Import Specialist
- Industrial Specialist
- Investigator (General)
- \*Management Analyst
- \*Personnel Specialist
- Public Information Specialist
- \*Realty Specialist
- \*Safety Officer
- \*Supply Management Specialist
- \*Writer and Editor

### Accounting

- \*Accountant
- Agricultural Marketing Specialist
- \*Contract Negotiator
- \*Economist
- Investigator (General)
- \*Supply Management Specialist

### Agriculture or Agricultural Services

- Agricultural Commodity Grader
- Agricultural Management Specialist
- Agricultural Marketing Specialist
- Agricultural Market Reporter
- \*Agricultural Research Technician
- \*Animal Husbandman/Scientist
- \*Entomologist
- \*Hydrologist
- \*Plant Scientist (various specializations)
- \*Range Conservationist/Scientist
- \*Realty Specialist
- \*Soil Conservationist
- \*Wildlife Biologist

### Architecture

- \*Architect
- \*Realty Specialist

### Bacteriology

- \*Microbiologist

### Biology or Biological Sciences

- Agricultural Commodity Grader
- Agricultural Management Specialist
- \*Animal Husbandman/Scientist
- \*Biologist
- \*Biological Laboratory Technician
- \*Entomologist
- Environmentalist
- Geologist
- Medical Technologist
- \*Microbiologist
- \*Pharmacologist
- \*Physiologist
- \*Plant Scientist
- \*Range Conservationist/Scientist
- \*Statistician
- \*Wildlife Biologist
- \*Zoologist

### Botany

- \*Entomologist
- \*Hydrologist
- \*Plant Scientist
- \*Range Scientist
- \*Wildlife Biologist

### Business Administration

- \*Administrative Assistant/Officer
- Agricultural Commodity Grader
- Agricultural Marketing Specialist
- \*Budget Analyst
- \*Contract Negotiator
- Financial Institution Examiner
- \*Industrial Relations Specialist
- Investigator (General)
- Loan Specialist
- \*Personnel Specialist
- \*Printing and Publications Officer
- \*Realty Specialist
- \*Statistician
- \*Supply Management Specialist

### Chemistry

- Agricultural Commodity Grader
- \*Chemist
- Compliance Investigator
- Forest Products Technologist
- \*Geologist
- \*Hydrologist
- Medical Technologist
- \*Microbiologist

### Chemistry (Contd.)

- Oceanographer
- Patent Examiner
- \*Pharmacologist
- \*Physical Science Technician
- Quality Assurance Specialist

### Commercial Art

- \*Illustrator
- \*Printing and Publications Officer
- \*Visual Information Specialist

### Dietetics

- Dietician

**Economics**

Agricultural Commodity Grader  
Agricultural Marketing Specialist  
Agricultural Market Reporter  
\*Budget Analyst  
\*Industrial Relations Specialist  
Investigator (General)  
Loan Specialist  
Operations Research Analyst  
\*Printing and Publications Officer  
\*Statistician  
\*Supply Management Specialist

**Education**

Extension Specialist  
\*Statistician

**Engineering**

\*Engineer (various branches)  
\*Engineering Technician  
\*Environmentalist  
Forest Products Technologist  
\*Geologist  
\*Hydrologist  
Patent Examiner  
Quality Assurance Specialist  
\*Realty Specialist  
\*Statistician

**English**

\*Printing and Publications Officer  
\*Public Information Specialist/Officer  
\*Writer-Editor

**Entomology**

\*Entomologist

**Finance**

Industrial Relations Specialist  
Investigator (General)  
Loan Specialist  
\*Realty Specialist

**Fine Arts**

\*Illustrator  
\*Visual Information Specialist

**Food Technology**

Agricultural Commodity Grader  
\*Food Technologist

**Forestry**

Cartographer  
Forester  
Forest Products Technologist  
Park Ranger  
Realty Specialist

**Geology**

Geologist  
\*Hydrologist  
\*Realty Specialist

**Home Economics**

Agricultural Commodity Grader  
Home Economist

**Hydrology**

\*Hydrologist

**Industrial Management**

\*Administrative Assistant  
\*Budget Analyst  
\*Industrial Relations Specialist  
\*Industrial Specialist  
Investigator (general)  
\*Printing and Publications Officer  
\*Supply Management Specialist

**Journalism**

\*Writer-Editor  
\*Public Information Specialist/Officer

**Landscape Architecture or Design**

Landscape Architect

**Law**

Agricultural Marketing Specialist  
Attorney  
\*Contract Negotiator  
Criminal Investigator  
Investigator (general)  
Loan Specialist  
\*Realty Specialist  
\*Supply Management Specialist  
Tax Law Specialist

**Library Science**

Librarian  
Library Technician

**Marketing**

Agricultural Commodity Grader  
Agricultural Marketing Specialist  
Agricultural Market Reporter  
\*Contract Negotiator  
\*Statistician  
\*Supply Management Specialist

**Mathematics**

Agricultural Marketing Specialist  
\*Chemist  
\*Economist  
\*Geologist  
Geophysicist  
\*Hydrologist  
\*Mathematician  
Meteorologist  
\*Operations Research Analyst  
\*Statistician

**Medicine**

\*Medical Officer (Physician)  
\*Pharmacologist  
\*Nutritionist

**Microbiology**

\*Microbiologist

**Nursing**

\*Nurse

**Operations Research**

Operations Research Analyst

**Pharmacology**

\*Pharmacologist

**Physical Sciences**

Cartographer  
\*Chemist  
Environmentalist  
Hydrologist  
\*Patent Examiner  
\*Pharmacologist  
\*Physicist  
\*Physical Science Technician  
\*Statistician

**Physics**

\*Engineer  
Forest Products Technologist  
\*Geologist  
\*Hydrologist  
Meteorologist  
\*Patent Examiner  
\*Physicist



**Physiology**

- \*Pharmacologist
- \*Physiologist

**Political Science**

- \*Administrative Assistant/Officer
- \*Budget Analyst
- \*Industrial Relations Specialist
- \*Management Analyst
- \*Personnel Specialist
- \*Sociologist

**Psychology**

- \*Personnel Specialist
- Statistician

**Public Administration**

- \*Administrative Assistant/Officer
- \*Budget Analyst
- \*Industrial Relations Specialist
- Investigator (general)
- \*Personnel Specialist
- \*Management Analyst

**Range Management**

- \*Range Scientist

**Social Sciences**

- Investigator (general)
- \*Personnel Specialist
- \*Realty Specialist
- \*Statistician

**Sociology**

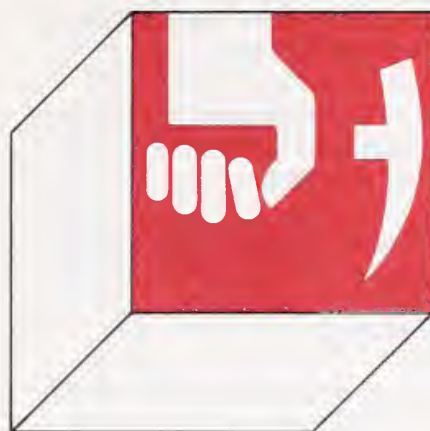
- \*Personnel Specialist

**Veterinary Medicine**

- \*Animal Scientist
- \*Pharmacologist
- \*Veterinary Medical Officer

**Zoology**

- \*Entomologist
- \*Physiologist
- \*Wildlife Biologist
- \*Zoologist

**The Agricultural Research Service Technician**

Many vacancies in ARS are for biological, physical science, and engineering technicians. Many applicants for these positions have bachelor's degrees, although this is not specifically required. Applicants with specific backgrounds in soil science; animal science; range science; microbiology; chemistry; biochemistry; plant science; chemical, agricultural, and civil engineering; and entomology have the best employment opportunities. Most of these positions are filled at the GS-4 or GS-5 level, with promotion potential to GS-7. In some instances, technicians can be promoted to grades as high as GS-11.

Technicians provide technical support and assistance to professional personnel engaged in scientific and technical work in the biological and agricultural sciences.

Biological technicians, biological laboratory technicians, and agricultural research technicians perform technical work in biological and agricultural laboratories, fields, greenhouses, and other experimental areas. Their work involves media preparation, plant propagation, specimen collection, harvesting, application of various treatments, data collection and processing, report preparation, and similar tasks.

Engineering technicians perform technical work in engineering research, development, design, or

other engineering functions. Duties include testing materials and equipment; installing, calibrating, and operating laboratory and field equipment and instruments; compiling and processing data; and preparing technical reports, plans, specifications, and other related work.

Physical science technicians perform technical work in chemistry, physics, food science, and other related physical sciences. They assist professional employees by calibrating and operating measuring instruments, mixing solutions, making chemical analyses, setting up and operating test apparatus, and by compiling and processing data.

Experience requirements for technician grades are indicated below. General experience is that which has been acquired through routine work in a laboratory or field situation. Specialized experience is similar to that described in the section on the duties of each type of technician.

| Grade | Years of general experience | Years of specialized experience | Years of total experience |
|-------|-----------------------------|---------------------------------|---------------------------|
| GS-4  | 1½                          | ½                               | 2                         |
| GS-5  | 2                           | 1                               | 3                         |
| GS-7  | 2                           | 3                               | 5                         |

Appropriate education above the high school level may be substituted for experience; course work must be related to the position. Two years of college study in an appropriate field may be substituted for the GS-4 experience requirements. Completion of all the requirements for a bachelor's degree in an appropriate field of study may be substituted for all experience required at the GS-5 level.



### The Agricultural Research Service Scientist

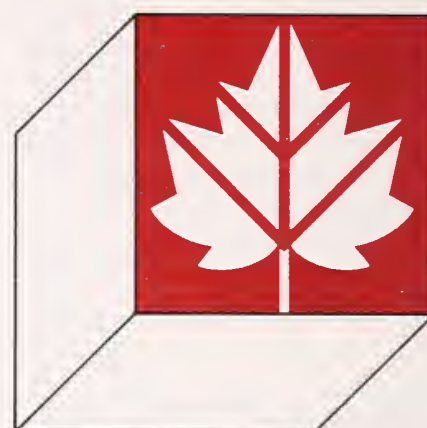
ARS currently employs about 3,100 professional scientists, representing 30 scientific disciplines, in grades GS-5 through GS-16. The most common professions represented are chemist, entomologist, soil scientist, plant physiologist, agronomist, agricultural engineer, plant pathologist, and geneticist. Other disciplines, including veterinarian, chemical engineer, food technologist, hydrologist, and mathematician, are represented to a lesser extent.

In general, the following combinations of education or experience

*in the appropriate field* are required to qualify for the grade level shown:

- GS-5 Four years of post high school education in a bachelor's degree program.
- GS-7 Requirements for GS-5 plus 1 year of graduate education or 1 year of professional experience.
- GS-9 Requirements for GS-5 plus 2 years of graduate education, completion of all requirements for a master's degree, or 2 years of progressively responsible professional research experience.
- GS-11 Requirements for GS-5 plus 3 years of graduate education, completion of all requirements for a doctoral degree, or 3 years of progressively responsible professional research experience appropriate to the position being filled.

The majority of ARS scientists are hired at the GS-11 level or above and are recent PhD's in the biological and physical sciences. There are few GS-5 and 7 positions filled by applicants with bachelor's degrees. Opportunities for advancement beyond GS-11 without PhD level education are limited.



### Salaries And Benefits

Professional, administrative, technical, and clerical employees are paid under the General Schedule (GS) pay plan, a series of grades from 1 to 15 and steps within those grades from 1 to 10. A copy of the current GS salary scale is enclosed as a part of this booklet. When hired, an individual is normally paid at the first step of the grade of the position. After a specific waiting period, he or she becomes eligible for a within-grade step increase. For example, a newly hired GS-5 receives pay at the GS-5, step 1, rate and 1 year later could be advanced to GS-5, step 2. The increase is based upon satisfactory performance of the required duties.

The waiting periods for within-grade increase eligibility are as follows:

- To steps 2, 3 and 4 — 52 weeks each
- To steps 5, 6 and 7 — 104 weeks each
- To steps 8, 9 and 10 — 156 weeks each

Annual pay rates are based on a 40-hour work week. Salaries of part-time employees are reduced in proportion to the number of hours worked.



Both full-time and part-time positions are available in ARS.

In addition to the periodic raises, each October the President signs an Executive Pay Adjustment, which is generally based upon the prevailing salaries paid by private industry nationwide.

Promotion, with accompanying pay increases, to higher GS levels can be based on an established target grade for the original position, or on a move to a different position rated at a higher grade level. Advancement opportunities are based upon the Merit Promotion Plan, which allows employees the opportunity to compete for higher grade level positions for which they become qualified.

All permanent and most temporary employees are entitled to annual (vacation) leave and sick leave. Annual leave is provided not only for vacations but also for time employees may request to be absent from their jobs for other reasons. These could include a few hours off to take care of personal business matters or to pick up or leave children at school. Sick leave is provided for medical and dental appointments as well as for periods of illness. Annual leave accrues at the rate of 4 hours per 2-week pay period during the first 3 years of Federal Government service, 6 hours per pay period during 4 to 15 years of service, and 8 hours per pay period after 15 years of service. Military service is credited toward the accrual rate. Employees receive 4 hours of sick leave per pay period regardless of length of service.

The Government contributes to the cost of an employee's health and life insurance policies and retirement program. Fringe benefits in Government jobs compare favorably with those in private industry.

## Training Opportunities

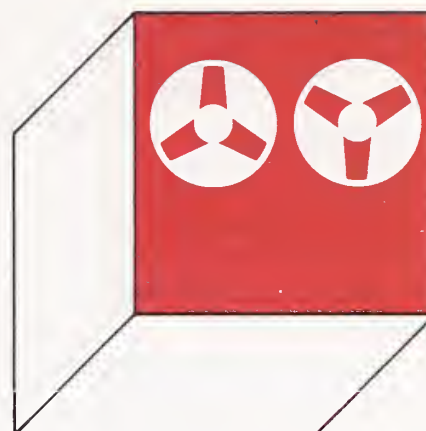
ARS encourages self-improvement for all employees. To support this, ARS offers training in fields that are, or will be, directly related to the performance of official duties by the employee. Such training may be in scientific, professional, technical, or administrative fields.

Programs similar to those offered by major universities for their professional employees are available to allow ARS employees to expand their areas of expertise. Scientists are also encouraged to participate in the professional societies and meetings appropriate to their fields.

Many ARS facilities are located at or near colleges and universities. This facilitates continuing education in out-of-service training programs.

In addition, other training programs are available to ARS employees. For example, the USDA Graduate School offers clerical, administrative, and management correspondence courses. OPM conducts training in clerical, administrative, procurement, and management fields. Examples of OPM training include effective written communication, leadership dynamics, and fiscal procedures for Government operations.

Usually ARS pays for the training and may allow employees to attend training on official work time, if the training is directly related to work assignments.



## Application Procedures For Federal Jobs

OPM and the special examining units, as previously discussed, are the only offices that can accept applications for permanent positions under the normal Federal employment process. Opportunities to apply for positions are announced by OPM or ARS when vacancies are anticipated.

After an examination or position vacancy is announced, applications are accepted as long as the announcement is open. In most instances, the closing date for acceptance of applications is stated in the announcement. Sometimes the



closing date is not stated; public notice of the closing date is given later. Under certain conditions, recently separated military personnel may apply after the closing date. Veterans should contact OPM for more information. Veterans who entered the service before October 1976 receive preference in Federal hiring programs.

Applicants should apply only for positions for which they meet the experience, education, and physical requirements. A physical handicap will never disqualify an applicant so long as the applicant can do the work efficiently without hazard to himself or herself or others.

Only U.S. citizens may apply for competitive examinations.

Applicants should ensure that the announcement covers their desired geographic area. The same type of work in two different States may be covered by two different announcements.

If applicants indicate they will accept employment only in certain geographic locations, they will be considered for employment only in the areas they specify. Applications are normally accepted from students who expect to complete, within 9 months, courses that would enable them to meet the qualification requirements of

a specific position. The Federal job application form is Standard Form 171, Personnel Qualifications Statement. This form and any supplemental forms required can be obtained at OPM offices, personnel offices listed on the last page of this booklet, and some post offices. A copy of an applicant's college transcript may also be required as part of an application.

It is vital that job application forms be completed carefully and accurately. All important facts about education and experience must be included, since applications must be complete to receive employment consideration. If information is missing, OPM or ARS may contact the applicant, but this takes time and delays action. Ordinarily, applicants will be given only one opportunity to furnish additional information. If replies are not received promptly, the requesting office will assume the applicant is no longer interested, and no further employment consideration will be given.

Applicants will be considered only for positions at or above the minimum salary or grade indicated on their application as acceptable. Applicants will also be rated for the highest grade level for which they qualify. (See the General Schedule Salary Chart included with this booklet for grade and salary levels.)

Persons who apply under an announcement and meet the requirements are called "eligibles."

Eligibles will be notified of examination results (Notice of Rating

form) by the announcing office. The examination process is explained in the next section. Please note that "examination" does not necessarily mean a written test.

An eligible should notify the announcing office of any changes in address, name, availability, or other essential information. When doing so, be sure to give your full name, title of the announcement, and your date of birth.

As an eligible, your chance of getting a job depends on how high you stand on the list relative to other eligibles and to the number of jobs that Government agencies are filling from the list or the announcement.

In ARS, as in all Government agencies, the personnel office prepares and forwards to the person filling the job (the selecting official) a list of the eligible applicants. That person must choose from among the top three available candidates.

What happens if you are not selected? If you had filed for the position with OPM, that office will put your application on lists it sends to other agencies that are filling positions. If you had filed with a special examining unit, your application will not be returned to you.

Eligibles should respond promptly to any inquiry as to availability, personal interview, or job offer, to receive full employment consideration.



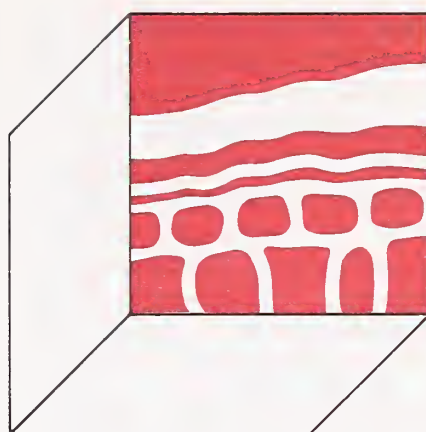
## The Examination Process

### A. Positions Not Requiring A Written Test

If your major is in a speciality listed below, you may apply for employment under a special announcement for the position. You will be rated for the position based on your education, experience, or background, as stated in your application. Applicants should ask for copies of job announcements and appropriate forms for filing from a college placement office, a Federal Job Information Center, or a special examining unit.

Accountant  
Aerospace Technologist  
Animal Husbandman/Scientist  
Architect  
Astronomer  
Bacteriologist  
Biological Technician  
Biologist  
Border Patrol Agent  
Cartographer  
Chemist

Correctional Officer  
Engineer  
Entomologist  
Equipment Specialist  
Estate Tax Examiner  
Forester  
Geodesist  
Geophysicist  
Hospital Administrator  
Hydrologist  
Illustrator  
Internal Revenue Agent  
Landscape Architect  
Librarian  
Manual Arts Therapist  
Mathematician  
Medical Record Librarian  
Metallurgist  
Meteorologist  
Microbiologist  
Nurse  
Oceanographer  
Occupational Therapist  
Patent Examiner  
Pharmacist  
Physical Science Technician  
Physicist  
Physiologist  
Plant Pest Control Inspector  
Plant Quarantine Inspector  
Plant Scientist  
Prison Administrative Worker  
Range Conservationist  
Refuge Manager  
Social Worker  
Soil Conservationist/Scientist  
Special Agent  
Speech Pathologist and Audiologist  
Statistician  
Teacher  
Therapist  
Urban Planner  
Veterinarian



### B. Positions Requiring A Written Test

If your major or equivalent experience is not in one of the specialties listed in the previous section, you must take a written test, the Professional Administrative Career Examination (PACE) to attain eligibility for employment in the Federal Government. PACE is the primary avenue of entry into Federal employment for positions that do not require a degree in any particular specialty. A large majority of the positions filled are in the occupations listed below.

For information about the PACE test and establishing eligibility for consideration, obtain a copy of the announcement from a college placement office or from a Federal Job Information Center. For the Center



nearest you, consult your local telephone directory under "U.S. Government."

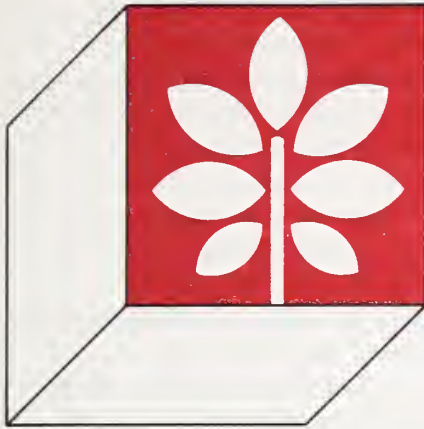
Career fields and positions covered by the Professional Administrative Career Examination include:

Adjudicating  
Administrative Officer  
Appraising and Assessing  
Agricultural and Fisheries  
Marketing Reporter  
Agricultural Program Specialist  
Air Traffic Control Specialist  
Alcohol, Tobacco, and Firearms  
Inspection  
Archeology  
Archivist  
Bond Sales Promotion  
Budgeting and Accounting  
Budget Administration  
Building Management  
Cargo Scheduling  
Civil Service Retirement  
Claims Examining  
Communications Management  
Communications Specialist  
Community Planning  
Computer Specialist (trainee)  
Contact Representative  
Contractor Industrial Relations  
Criminal Investigation  
Crop Insurance Administration  
Customs Inspection  
Customs Marine Officer  
Digital Computer Systems  
Administration

Economist  
Education Research and  
Program Specialist  
Employee Development Specialist  
Facilities Management  
Financial Analysis  
Financial Institution Examining  
Food Assistance Program Specialist  
Foreign Affairs  
General Accounting, Clerical, and  
Administrative  
General Arts and Information  
General Anthropology  
General Business and Industry  
General Claims Examining  
General Clerical and Administration  
General Education and Training  
General Investigation  
General Transportation  
Geography  
Highway Safety Management  
History  
Hospital Housekeeping Management  
Housing Management  
Immigration Inspection  
Import Specialist  
Industrial Property Management  
Industrial Specialist  
Insurance Examining  
Intelligence  
Internal Revenue Officer  
International Relations  
Labor Management and Employee  
Relations  
Labor Management Relations  
Examining  
Legal Assistance  
Legal Clerical and Administration  
Librarian  
Loan Specialist  
Logistics Management  
Management Analysis  
Manpower Development  
Manpower Research and Analysis  
Museum Curator  
Occupational Analysis  
Outdoor Recreation Planner

Park Management  
Passport and Visa Examining  
Personnel Management  
Personnel Staffing  
Position Classification  
Printing Management  
Production Control Specialist  
Program Analysis  
Property Disposal  
Psychology  
Public Health Inspection  
Public Health Program Specialist  
Public Information  
Public Utility Specialist  
Quality Assurance Specialist  
Realty  
Safety Management  
Salary and Wage Administration  
Security Administration  
Social Insurance Administration  
Social Insurance Claims Examiner  
Social Science  
Social Services  
Sociology  
Supply Group  
Tax Law Specialist  
Tax Technician  
Technical Information Services  
Technical Writing and Editing  
Trade Specialist  
Traffic Management  
Transport Operations  
Transportation Loss and Damage  
Claims Examining  
Unemployment Compensation Claims  
Examining  
Unemployment Insurance  
Veterans Claims Examining  
Vocational Rehabilitation Counselors  
Wage and Compliance Specialist  
Wage and Hour Law Administration  
Workmen's Compensation Claims  
Examining  
Writing and Editing





## Special Employment Programs

OPM and other Federal agencies including ARS actively participate in a few special programs offering employment to students. These special student-related employment programs are:

1. The Presidential Management Intern Program
2. The Youth Work Experience Program
3. Cooperative Education
  - (a) High School Students
  - (b) Associate-Degree Students
  - (c) Baccalaureate-Degree Students
  - (d) Graduate Students
4. The Faculty Fellowship Program
5. Veteran Readjustment Act
6. College Work Study
7. Selective Placement Programs

### 1. The Presidential Management Intern Program

Under this program, up to 250 outstanding graduate students in public management enter ARS and other parts of Federal service for 2-year internships. These interns represent the highest caliber students of their schools. They are expected to possess a personal commitment to excellence, exceptional ability and

achievement, strong leadership qualities, and demonstrated interest in a public service management career.

By drawing participants from the diverse student population of the country's graduate schools of public management, the program creates a continuing source of highly trained and qualified men and women from a variety of social and cultural backgrounds to meet the challenges of governmental management.

The Presidential Management Intern Program provides for 2-year appointments to developmental positions throughout the executive branch of the Federal Government. Interns are expected to apply the special skills they have acquired in graduate school and through any previous employment. Upon the successful completion of their internships, participants may have their status converted to a career-conditional appointment. Interns work at headquarters, regional offices, and other field installations. The work of interns falls into such categories as program planning and evaluation, policy analysis, financial management, labor relations, personnel management, program/management analysis, and administrative and management services. Specific work assignments are based on the needs of the particular agency and the interests and capabilities of the interns.

Interns, for example, might work on an agency's budget request and justification, write speeches, review proposed legislation, answer congressional inquiries, draft reports, or analyze organizational patterns and structures. Assignments involve significant work on pending issues in such program areas as natural resources, community and human development, and intergovernmental

relations, and demand flexibility, a willingness to work hard, and the capacity to learn quickly.

A distinguishing feature of the intern program is its educational aspect. Participants attend orientation sessions at the beginning of their assignments and special seminars and training programs throughout their internships. It is expected that agencies will prepare career development plans for each intern. In addition, career counseling will be made available.

## General Information

**Eligibility:** Persons enrolled in graduate schools who will be receiving advanced degrees with a concentration in public management during the academic year are eligible to apply for the program.

**Application Process:** Application forms are available from the deans of graduate schools offering degrees in public management or from OPM. Students interested in being considered for the program *must* be nominated by the deans of their school. Applications, therefore, should be submitted to the deans, *not* to OPM. The number of nominations from any one school is limited.

**Selection:** Nominations will be submitted to OPM, which will schedule regional screening panels to interview candidates. Panels will be composed of representatives from public agencies and other individuals concerned with improved public management. OPM will select the finalists.

**Placement:** Finalists will be referred to several Federal agencies for placement. Preferences as to

agencies, geographical locations, and occupational fields will be honored, to the extent feasible. Offers of employment will be made by the agencies.

**Pay and Benefits:** Initial appointments will be made at grade GS-9. Interns may receive career promotions in accordance with existing promotion guidelines. Interns will also be eligible to participate in such benefit programs as health and life insurance and the Federal retirement system.

For Further Information. . .  
For application forms and further information on the Presidential Management Intern Program, contact the dean of your graduate school of public management or OPM's Bureau of Intergovernmental Personnel Programs, 1900 E Street, N.W., Washington, D.C. 20415.

## **2. The Youth Work Experience Program**

Everyone feels the need to belong, to be of real value to others, and to be recognized as a useful person. The fulfillment of this human desire is especially urgent for those needy youth in America who often view their own lives as pointless and hopeless.

As an employer, the Federal Government is well aware of this problem and has taken steps to alleviate it.

The youth work experience programs described in this publication are designed to assist young people, at least 16 years of age, to gain work experience and to learn what will be required of them later when they seek full-time employment. As members of the Agricultural Research Service or other parts of the Federal work force, these youths make significant contributions. They are also able to

use their salaries to supplement their family incomes, which is often necessary if they are to return to or continue their formal educations. Perhaps most important of all, they can participate in the affairs of government and test themselves as working and achieving young adults.

The opportunity for substantial numbers of needy young people to obtain summer work experience with the Federal Government as an employer was first initiated in the Spring of 1965. Since that time, the Federal Employment Program for Youth (also known as Summer Aid Program) has grown dramatically. Agencies now have a goal of employing one needy youth for every 40 regular employees on their payrolls. Employees under this program are paid at the Federal minimum wage rate established by the Fair Labor Standards Act.

Agencies are asked to provide meaningful work assignments, as opposed to "make-work" jobs. The result is that most often the youths are employed as aids in a variety of occupational fields. They are able to visualize widening opportunities for their futures as they are exposed to the challenges of our society. In addition, the agencies emphasize special activities which provide the participants with a well-balanced summer employment experience. Orientation programs, job-related training, and cultural enrichment opportunities have all proven to be effective supplements to job assignments.

Individuals selected for this program must first be certified as eligible by an office of the State Employment Service in their local communities. Preference is given to those youths whose family incomes are at or near the poverty level. No specific knowledge or skill is required.

Every effort is made to place applicants in work assignments

commensurate with their interests and abilities. Past work history and the availability of adequate transportation to the job site are among the other factors considered prior to placement.

Referrals of summer aids are normally made by local offices of the State Employment Service in the spring of each year. However, appropriate school officials and other neighborhood workers may assist in the recruitment of youths who would qualify as summer employees of the Federal Government.

Work activity under the Federal Summer Employment Program for Youth is scheduled for the period May 13 through September 30 of each year.

The primary goal of the second youth work experience program, known as the "Stay-in-School Program," is to give needy students a chance to work part time in Federal agencies, thus allowing them to continue their educations without interruption caused by financial pressures.

Young people, at least 16 years of age, who are enrolled as students in an accredited secondary school or institution of higher learning and who meet the financial need criteria of the program, are permitted to work up to 20 hours a week during the school year and 40 hours a week during vacation periods. The work assignments are varied. Some agencies, because of the nature of their operations, are able to employ youths at times other than the customary working hours.

It is important in all instances, that youths appointed as part of this program are, in the opinions of their school counselors and principals, capable of maintaining an acceptable academic standard in their school work.

When suitable job openings are available in Federal agencies, local offices of the State Employment



Service, as well as student financial aid officers, guidance counselors, and appropriate faculty members, refer applicants for these jobs. Appointments can be made any time during the course of the year, except for the period May 13 through August 31 (when summer jobs are filled as a result of either a summer employment examination or other agency programs). However, employment of students already working prior to May 13 may be continued throughout the summer months.

The regular rate of pay for participants in this program is fixed by the employing agency, based upon the duties assigned and the expected level of performance. In no case will a student be paid less than the Federal minimum wage established by the Fair Labor Standards Act.

Additional information about these Federal employment programs for needy youths may be obtained from the local offices of the State Employment Service or the nearest Federal Job Information Center.

### **3. Cooperative Education Programs**

Cooperative education was initiated in the early 1900's as a means of strengthening student learning by alternating classroom work with study-related employment in the public and private sectors. For the student, it is a means of earning and learning. For the college sponsoring a co-op program, it is a means of strengthening the education process. For the employer, it is an effective recruitment and low-cost training method.

Federal agencies, including USDA's Agricultural Research Service, utilize cooperative education programs primarily to identify and prepare students for career appointments after graduation. Many students are selected because they are

studying in fields related to occupations in which there is a shortage of candidates.

Federal agencies which have had substantial and extensive experience in employing cooperative education students give the program a high overall assessment. Among the values cited are:

- The chance to review work performance of students before selecting them for entry-level positions.
- A viable and cost-effective tool in recruiting for hard-to-fill positions, especially in engineering and accounting.
- The feed-in of new findings and theories from the educational environment.
- The encouragement of women to secure jobs usually held by men.
- The program's effectiveness in the recruitment of minority candidates.
- The relatively low cost and high effectiveness of training co-op students compared with that of training newly employed graduates at higher grade levels.

Detailed information on requirements for establishing or utilizing the Federal cooperative education programs at any level (high school through graduate school) may be obtained by contacting the nearest Federal Job Information Center or OPM, Room 247, 1900 E Street, N.W., Washington, D.C. 20415, or the personnel offices listed on the last page of this booklet.

Students interested in employment under the cooperative education program should contact the program coordinator or placement counselor at their respective schools. Cooperative education programs may be established in four categories:

- A. High School
- B. Associate-Degree Students in Two-Year Educational Institution
- C. Baccalaureate-Degree Students in Four-Year Institution
- D. Graduate Students

### **A. High School**

Relatively few agencies at this time have cooperative education programs at the high school level. However, the Agricultural Research Service is aware of the need to interest women and minority students in the physical and life sciences when they are in high school and junior high school. Get in touch with one of the personnel offices on the last page of this booklet to find out about the status of the program in ARS.

### **B. Two-Year College Programs**

Students who are working toward associate degrees in community and junior colleges or qualifying technical institutes are eligible for a cooperative program at this level. The general rules that apply are as follows:

1. There must be a signed agreement between the school and ARS which provides for the student's pursuit of an occupational field by combining periods of study with periods of study-related paid employment.
2. Students must be in full-time attendance at the educational institution (usually 12 hours per semester or the equivalent), must be enrolled in a qualifying cooperative education program and must be recommended for employment by the appropriate officials at the educational institution.
3. A student's work assignments must be closely related to his or her major field of study.
4. The student must complete course requirements for graduation in 2 1/2 years and, before graduation, must work a total of at least 26 weeks (1,040 hours) to be eligible for non-competitive conversion to a permanent appointment upon graduation.

ARS and the school determine the number of separate work periods needed to meet these requirements. Work periods are usually at least 60 calendar days long and are designed to correspond to a semester or quarter. The work cannot be scheduled entirely during summer or school vacations and is generally on a full-time (40-hour week) basis. Students cannot work more than 1,040 hours during any 12-month period.

5. Costs of students' travel to their first duty station will generally not be paid.

### **C. Cooperative Education for Baccalaureate-Degree Students**

Students working toward a bachelor's degree at an accredited college or university can participate in a cooperative education program. All occupations within ARS are included.

Requirements for the 4-year student are basically the same as those listed for the 2-year student with the following exceptions:

1. The student may complete the minimum work required (26 weeks or 1,040 hours) during 4 years of study.

2. The student may work more than 26 weeks (1,040 hours).

3. At least two separate work periods with ARS, interspersed with full-time academic study, must be completed before graduation.

4. One complete work period must be completed during the first year a student is on ARS's rolls. The one work period must be within 18 months of the student's expected graduation date.

5. The student must maintain at least a 2.00 grade point average on a 4.00 scale or an average grade of C.

### **D. Cooperative Education for Graduate Students**

Requirements for students in a cooperative education program at the graduate level are similar to those for the 2- or 4-year college student with the following exceptions:

1. A total equivalent to 16 weeks of full-time employment in pay status must be completed, with 26 weeks (1,040 hours) being the maximum number a student may work during a 12-month period. Part-time employment is permitted.

2. Requirements for the master's degree must be completed within 30 months. Requirements for the PhD degree must be completed within 42 months after entering graduate school.

3. The cooperative work period generally will not occur while the student is taking course work full time.

4. The work period may be continuous or in two periods separated by a period of full-time academic study.

### **4. The Faculty Fellowship Program**

The Faculty Fellowship Program makes it possible for bonafide members of the faculty of an accredited college or university to work for periods of 2 to 3 months in Federal agencies. These appointments can be useful to the agency by bringing in faculty members who learn about Federal programs and who can then counsel students better regarding career goals and requirements. No written test is required.

In the Agricultural Research Service, faculty fellowship appointments have usually been made for summer periods, but there is no requirement which precludes their use at other times. Such appointments

have been useful in furthering affirmative action goals through the appointment of women and minorities.

Application on Standard Form 171 may be submitted directly to one of the personnel offices listed on the last page of this booklet.

Other faculty placement programs throughout the Government include:

1. American Assembly of Collegiate Schools of Business, *Federal Faculty Fellowship Program in Business and Administration*
2. The American Association for the Advancement of Science *Congressional Scientist-Fellow Program*
3. American Council on Education *Congressional Fellowship Program*
4. American Political Science Association *Congressional Fellowship Program*
5. American Society for Engineering Education (in cooperation with the National Aeronautics and Space Administration) *Summer Faculty Fellowships*
6. The Brookings Institution *Economic Policy Fellowship Program*
7. Energy Research and Development Administration *Special Faculty Research Program*



8. National Association of Schools of Public Affairs and Administration *Faculty Fellows Program*
9. National Research Council *Postdoctoral Research Associateships*
10. National Science Foundation *Postdoctoral Energy-Related Fellowships*
11. National Science Foundation *Scholars-in-Residence*
12. National Urban League *Summer Fellowship Program*
13. President's Commission on White House Fellowships *The White House Fellows Program*
14. Smithsonian Institution *Smithsonian Opportunities for Research and Study in History, Art and Science*
15. U.S. Department of Health and Human Services *Fellows Program*
16. U.S. Department of Education *Fellows Program*
17. U.S. Department of Justice, Law Enforcement Assistance Administration *Visiting Fellowship Program*
18. U.S. General Accounting Office *Faculty Fellowship Program*
19. The Woodrow Wilson International Center for Scholars

#### **5. Veterans' Readjustment Act (VRA) Appointment**

For appointment under this program, an applicant must be a Vietnam era veteran (those with service between August 5, 1964, and May 7, 1975) discharged under other than a dishonorable discharge. The veteran must have completed no more than 2 years of education beyond graduation from high school (or equivalent) and must agree to participate in an educational or on-the-job training program designed to help attain career goals. The education restriction is waived for veterans with compensations and veterans discharged because of service-connected disabilities. Appointments are made at grade GS-7 or equivalent and below.

Persons eligible or interested in this type of appointment may apply directly to any personnel office on the last page of this booklet.

VRA appointees are eligible for permanent Government positions after 2 years of satisfactory performance.

#### **6. College Work Study Program**

This program is designed to provide part-time work for students with demonstrated financial need. The program is operated by grants made to certain colleges.

Placement is done in cooperation with college placement offices. Students must be enrolled at an institution on at least a half-time basis and must meet citizenship requirements. Pay varies with the college, and employment is limited to 16 hours per week during vacations. Students should check with their local college or university about programs in their schools.

These appointments do not lead to permanent Government positions.

#### **7. Selective Placement Programs**

These programs are designed to assist handicapped individuals in obtaining and retaining employment consistent with their level of skills and abilities and their capacity for safe and efficient job performances.

a. Unpaid Work Experience Program—This program is designed to provide unpaid work experience for clients of State vocational rehabilitation agencies and disabled veteran clients of the Veterans Administration. The rehabilitation agency inspects the work site for conformance to safety standards. A working agreement is then established and the handicapped person is placed in a temporary job. Payment for the work experience program is provided directly to the individual by the rehabilitation agency.

b. Special Employment Authorities—In addition to the above unpaid work experience program, ARS has authority to employ severely physically handicapped or mentally retarded persons who have demonstrated their ability to perform the duties of the position satisfactorily on a temporary basis or who are certified by counselors of a rehabilitation agency as likely to succeed in performing the duties. Handicapped persons who are interested in a position in ARS should contact the nearest personnel office listed on the last page of this booklet or have the sponsoring rehabilitation agency do so.

### Other Agricultural Employment

Although agriculture is one of the largest industries in the United States, the number of persons employed in agricultural positions is small compared with the total civilian work force. However, additional employment opportunities are created as national and international priorities shift to meet the increasing need for food and fiber. ARS and other organizations share the responsibility for meeting this need.

Information on opportunities for agricultural workers in the Federal Government is available in "The Federal Career Directory," which may be found in local libraries.

In addition to Federal Agencies, agricultural work is performed by State agencies; universities; colleges; private agricultural business, such as chemical and seed companies; and industry-supported cooperatives. An excellent source of information on agriculture careers is "Occupational Outlook" published by the U.S. Department of Labor. Copies of this publication may be available in school or local libraries, or can be purchased from the U.S. Government Printing Office.

### Addresses Of Personnel Offices

USDA-SEMS  
Administrative Operations Division  
Personnel Branch  
Bldg. 003, BARC-West  
Beltsville, Maryland 20705

Areas serviced: Delaware,  
Washington, D.C., Maryland,  
Maine, Massachusetts, New  
Jersey, New York,  
Pennsylvania, Vermont, West  
Virginia

North Central Region  
USDA-ARS  
Personnel Branch  
2000 West Pioneer Parkway  
Peoria, Illinois 61614

Areas serviced: Nebraska,  
Kansas, Missouri, Iowa, North  
Dakota, South Dakota, Indiana,  
Illinois, Michigan, Ohio,  
Minnesota, Wisconsin

Southern Region  
USDA-ARS  
Personnel Branch  
P.O. Box 53326  
New Orleans, Louisiana 70153

Areas serviced: Texas,  
Oklahoma, Mississippi,  
Louisiana, Arkansas, Georgia,  
North Carolina, South Carolina,  
Kentucky, Tennessee, Virginia,  
Alabama, Florida, Puerto Rico,  
Virgin Islands, Mexico

Western Region  
USDA-ARS  
Personnel Branch  
1333 Broadway, Suite 400  
Oakland, California 94612

Areas serviced: Alaska, Arizona,  
New Mexico, California,  
Nevada, Hawaii, Colorado,  
Wyoming, Utah, Idaho,  
Montana, Washington, Oregon

Eastern Regional Research Center  
USDA-ARS  
600 East Mermaid Lane  
Philadelphia, Pennsylvania 19118

Area Serviced: Philadelphia

Plum Island Animal Disease Center  
USDA-ARS  
P.O. Box 848  
Greenport, L.I., New York 11944

Area Serviced: Plum Island



# Plant Scientists

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in Agricultural  
Research

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United States  
Department of Agriculture  
Science and Education  
Administration



## PLANT SCIENTISTS in Agricultural Research

Science and technology offer the best hope for our farmers to be able to continue feeding their fellow citizens. Researchers continue to participate in imaginative experiments aimed at overcoming present biological limits to food production. When problems of land or water, plants or animals, or food, clothing, and shelter are involved, finding solutions to them calls for agricultural scientists.

Photosynthesis seems to hold the key to making the earth more productive. We must learn to make our plants more efficient at capturing solar energy. In order to do this, SEA scientists are studying all aspects of plant growth—genetics, plant physiology, pest management, and photosynthesis. A micro-computer controlled system will permit scientists to test and study whole-plant responses to climate and environment.

Most of the plants and crops of the United States originated in other countries. Among the ornamental plants found and brought to this country are the Japanese cherry tree, Zoysia lawngrass, and scores of rhododendrons and azaleas. Today, Science and Education Administration (SEA) plant explorers still search the world for new crop plants or for germ plasm to improve our own varieties. The Bradford pear tree, brought from China for fruit breeding, is one of our best decorative trees for street planting.

SEA scientists have helped develop two excellent new potato varieties for the eastern United States which combine favorable processing characteristics with high quality, good yield, and multiple pest resistance.

Scientists have developed new pyracantha varieties which are resistant to fireblight and tolerant to cold.

Breeding plants for resistance or tolerance to diseases, nematodes, and insects is a persistent task. Plant breeders are constantly redesigning and improving crops. Through painstaking re-

search, geneticists, agronomists, and horticulturists identify and select the best features from thousands of plants, and then combine them to make valuable new varieties.

Plant scientists continually conduct research for safe and effective ways to do away with weeds, whether they grow in the cultivated crops, grazing lands, or your own lawn.

Plant physiologists of SEA have found that plant germination, growth, flowering, reproduction, and dormancy all depend on the color and intensity of light that falls on the plant and that these responses can be altered by changing the plant's exposure to light. They have found that many plant responses also can be triggered by treatment with chemicals that regulate plant growth. Light management, growth regulators, and other practices developed by SEA plant scientists have made crop production easier and less expensive.

Vast collections of plants at the National Arboretum in Washington, D.C., furnish SEA plant





breeders with a pool of characteristics they can use in custom breeding new kinds of ornamentals.

A plant Air Pollution Laboratory has been established at Beltsville, Maryland, where SEA scientists will direct research toward a better understanding of how air pollutants act on agronomic, horticultural, and ornamental plants, and toward developing methods for controlling damage to plants.

Plant Scientists at the Salinity Laboratory in Riverside, California, are searching for salt-tolerant crops. They want to learn the mechanism of salt injury to plants and the physiological basis of salt tolerance. Salt accumulates in the soil and eventually prevents plant growth unless something is done about it.

#### **FOR RESEARCH IN THE PLANT SCIENCES, SEA EMPLOYS—**

##### **Agronomists:**

SEA agronomists perform research on breeding, production, and culture of aquatic, field, and horticultural crops; on relationships of plants and soil; on conservation crop and turf establishment; on management of propagation and seed production; on plant adaptation varietal testing; and on weed control.

##### **Botanists:**

SEA botanists perform research in taxonomy and nomenclature of plants; identification and description of plants and seeds; plant distribution and habits of growth; histochemistry of plants, fruits, and vegetables. They also prepare revisions and monographs of plant groups.

##### **Plant Ecologists:**

SEA plant ecologists perform research on the climatic, edaphic, biotic, and other environmental and ecological factors affecting plant growth and development; crop plant populations and spacing in relation to cultural practices and yield quality; effects of light, temperature, moisture, and nutrients on plant competition, growth, and development.

##### **Horticulturists:**

SEA horticulturists perform research in breeding, testing, propagation, culture and post-harvest physiology of fruits, vegetables, flowers, ornamental trees and shrubs; and related problems of production, storage, and handling.

##### **Nematologists:**

SEA nematologists perform research in effects of nematodes on production and plant growth; distribution and spread; enemies, diseases, and other natural controls; cultural, rotational, chemical, and therapeutical control; taxonomy, physiology, and relationship to plants and soil.

##### **Plant Geneticists:**

SEA plant geneticists perform research on inheritance and interaction of genetic characters, their environment, and basic physiological principles; development of more effective breeding methods and selection procedures; possible use of induced polyploidy and irradiation in crop improvement; and cytogenetics and cytotaxonomy of plants.

##### **Plant Pathologists:**

SEA plant pathologists perform research on plant diseases caused by parasitic or non-parasitic micro-organisms and viruses; life cycles of



disease-producing organisms; host-parasite relationships; effects of diseases on culture, harvest, transportation, and storage of plants; techniques of producing artificial epiphytotics of various diseases and methods for disease prevention and control.

### **Plant Physiologists:**

SEA plant physiologists perform research on physiological processes in plants, including photosynthesis, respiration, mineral element nutrition, water relations, absorption, and translocation; effects of light, temperature, moisture, and edaphic factors; effects of chemicals on plant growth; effects and nature of plant growth regulators; physical properties and chemical composition and their relation to soil and atmospheric environment; maturity, ripening, storage life and quality of plants and plant parts.

### **QUALIFICATIONS**

Plant scientists with bachelor's degrees in appropriate subjects are usually appointed at GS-5 and GS-7; those with master's degrees at GS-9; those with doctorates at GS-11. For positions above GS-11, progressively responsible research experience is required. SEA places special emphasis on the recruitment of well-qualified scientists with graduate training, preferably through the doctorate level.

### **EMPLOYMENT INFORMATION**

The positions are in the Federal civil service and are filled through competitive examinations, which are based on an evaluation of your education, training, and experience. Appointments are based on qualifications without regard to race, color, religion, handicap, sex, age, or national origin.

For additional information, announcements, or application forms, write to:

Personnel Division  
Science and Education Administration  
U.S. Department of Agriculture  
Federal Building  
Hyattsville, Maryland 20782

### **WORK LOCATIONS**

Plant scientists are employed throughout the United States.

### **PROFESSIONAL GROWTH AND RECOGNITION**

Challenging problems.  
Modern research facilities, equipment, and instruments.  
Stimulating scientific environment.  
Collaboration with outstanding scientists.  
Scientific seminars and training programs.  
Individual specialization and recognition.  
Authorship for original research.

### **CAREER BENEFITS**

Regular salary increases.  
Promotion based on scientific achievement.  
Incentive and honor awards.  
Liberal vacation and sick leave.  
Low-cost health and life insurance.  
Excellent retirement system.  
Advanced training opportunities.

### **ADDITIONAL OPPORTUNITIES MAY BE AVAILABLE IN—**

Summer assignments for graduate and undergraduate students, postdoctorate fellows, university professors and instructors.

Special assignments for research associates and professors on sabbatical leave.

Issued April 1980





# A Listing of Positions in LIFE SCIENCE RESEARCH with the U.S. DEPARTMENT of AGRICULTURE

• PLEASE POST IMMEDIATELY •

Listing No.: 5

Issuing Date: May 3, 1982

Closing Date: May 21, 1982

Unless specified otherwise for a particular vacancy.

## POSITIONS COVERED

This listing advertises only those positions meeting all the following criteria: (1) professional, (2) life science, (3) research, (4) in USDA, (5) GS-9 through GS-15. Any qualified citizen can apply.

Applications will be accepted for specific vacancies advertised only. All other applications will be returned without evaluation. Applicants will be informed of eligibility or ineligibility. Eligible candidates will be informed when positions have been filled. NOTE: Applications will not be returned.

## APPLICATION DIRECTIONS

Submit a separate, complete application (photocopies acceptable) for each listed job for which you wish to apply, including:

1. Form SF-171, Personal Qualifications Statement.
  2. Form CSC-1170/17, List of all College Courses with graduate coursework identified, or a copy of your transcript.
  - A. Specify exact date or expected date (month and year) of completion of all requirements for degrees.
  - B. All education must be reported in semester hours or quarter hours.
  - C. Include evidence that foreign education meets the requirements of an accredited U.S. college or university.
  - D. Include a description of any course not readily identifiable by title.
  3. A one-page abstract of MS thesis.
  4. A one-page abstract of PhD dissertation.
  5. List of publications, presentations, honors and awards.
  6. Qualifications Summary. Provide evidence of how you meet each minimum qualification and each of the other qualifications listed for the position for which you are applying. Include information concerning pertinent courses, duties, responsibilities, accomplishments, and publications. Do not apply for a position unless you meet every minimum qualification.
  7. Form SF-15, Claim for 10-point Veteran Preference, and supporting proof if you claim 10-point preference.
- To obtain forms and details on basic qualifications requirements, write, call, or visit the Federal Job Information Center (FJIC) listed in your telephone directory under "U.S. Government, Office of Personnel Management," and refer to "Announcement No. 421, Life Sciences."

## Send Applications to:

Special Examining Unit  
Science and Education  
U.S. Department of Agriculture  
6505 Belcrest Road, Room 555  
Hyattsville, Maryland 20782

## NOTE TO ADDRESSEES

If your address is incorrect on the mailing label, please send the label, with corrections noted, to the Special Examining Unit address given above. For reasons of economy, private individuals cannot be put on the mailing list.

## SALARY RANGES

|       |                     |       |                     |
|-------|---------------------|-------|---------------------|
| GS-9  | \$19,477 - \$25,318 | GS-13 | \$33,586 - \$43,666 |
| GS-11 | \$23,566 - \$30,640 | GS-14 | \$39,689 - \$51,596 |
| GS-12 | \$28,245 - \$36,723 | GS-15 | \$46,685 - \$57,500 |

## EQUAL EMPLOYMENT OPPORTUNITY

Qualified applicants will be considered for appointment without regard to race, color, religion, sex, marital status, physical handicap, age, national origin, or any other nonmerit factor.

## AVAILABILITY

Applicants for positions advertised in this listing must be available for employment within 9 months of the deadline date for acceptance of applications or earlier if specified for a specific position. If it is indicated that candidates must be available immediately for a specific position, applications will be accepted only from candidates who are available for employment within 3 months of the deadline date for acceptance of applications.

Form SA-E-596 (9/81)

## Announcement No. 421 - 2-0069

POSITION TITLE, GRADE, DUTY STATION  
SUPERVISORY MICROBIOLOGIST, GS-403-13, 14 or 15, ERRC  
Food Safety Laboratory, Microbiological Safety  
Research, Philadelphia, PA

USDA AGENCY: Agricultural Research Service

DUTIES: Incumbent is the Research Leader with technical and administrative responsibility for 7 scientists and 5 support personnel. Is responsible for initiating, planning, organizing, directing, coordinating, and carrying out a broad research program on the microbiological safety of food. The research program is so complex that it needs to be subdivided in order to make significant progress. Conducts a long range program involving: (1) Clostridium botulinum toxin production in food products; (2) other microorganisms of public health interest, such as staphylococcus, salmonella, yersinia, clostridia; (3) bacterial metabolism and genetics to develop basic information on toxic production and the ability of the microorganisms to develop resistance to antibacterial compounds; and (4) mycotoxins in the food supply, determining conditions inducing their formation, developing methods for identification and following metabolic fate in plant or animal species used for human foods.

MINIMUM QUALIFICATIONS: (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 421 and/or 408. Knowledge of (2) food microbiology; and (3) microbial metabolism; and skill in (4) coordinating and/or directing microbiological research.

Candidates must be available by January 10, 1983.

THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED to establish eligibility, will distinguish better-qualified candidates from among those otherwise eligible: Knowledge of (1) microbial toxin regulation and synthesis; and (2) microbial genetics.

## Announcement No. 421 - 2-0070

POSITION TITLE, GRADE, DUTY STATION  
PLANT PHYSIOLOGIST, GS-0435-11, Metabolism  
and Radiation Research Laboratory, Fargo,  
North Dakota

Term Appointment - Not to exceed two years.

USDA AGENCY: Agricultural Research Service

DUTIES: Incumbent conducts investigations on the basic principles and mechanisms of basipetal translocation in leafy spurge (Euphorbia esula L.). The objective of the assignment is to provide new scientific principles for the development of safe, effective and economical integrated control systems for leafy spurge. The incumbent plans and conducts greenhouse, plant growth chamber and laboratory research on the environmental, physiological and chemical modification or regulation of translocation patterns in leafy spurge. Mechanisms for enhanced basipetal transport of selected (14C)herbicides to inactive or dormant root bud systems will be investigated. Specific line of research as they affect herbicide translocation will include: (1) plant growth regulator-herbicide interactions; (2) chemical alteration of herbicide metabolism; (3) plant growth and development; and (4) environmental stress.

MINIMUM QUALIFICATIONS: (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; Knowledge of (2) radioisotope tracer techniques; (3) techniques and procedures used in laboratory, greenhouse, and growth chamber studies with higher plants; (4) plant growth regulators; (5) translocation.

This is a Research Associate position.

THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) perennial plants.



**ANNOUNCEMENT NO. 421- 2-0071**

**POSITION TITLE, GRADE, DUTY STATION**

**INTERDISCIPLINARY: PLANT PHYSIOLOGIST/BIOLOGIST/GENETICIST, GS-435/401/440-11/12, Proteins Research Unit, WREC, Albany, California**  
**TEMPORARY, Not To Exceed 1 Year**  
**USDA AGENCY: Agricultural Research Service**

**DUTIES:** Incumbent is responsible for planning, reporting, and conducting investigations of gene structure and regulation in wheat, with emphasis on the family of storage protein genes. Specific areas of research include (a) systematic studies of the events that accompany the activation and transcription of wheat storage protein genes, and (b) collaboration on studies of storage protein biosynthesis, and the selective isolation and structural analysis of storage protein genes.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) biochemistry including nucleic acids and enzymology; and (3) plant physiology including organelle isolation and cell tissue culture.

This is a Research Associate position.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) molecular biology including recombinant DNA techniques; and (2) genetics.

**ANNOUNCEMENT NO. 421- 2-0072**

**POSITION TITLE, GRADE, DUTY STATION**

**MICROBIOLOGIST, GS-403-12 or 13 or 14, Regional Poultry Research Laboratory, Avian Leukosis Research, East Lansing, Michigan**

**USDA AGENCY: Agricultural Research Service**

**DUTIES:** The incumbent is responsible for conducting original scientific investigations on the cause, mechanisms, and prevention of important diseases of poultry induced by various oncogenic and other viruses. Specifically, the incumbent will join a multidisciplinary team currently involved in research on lymphoid leukemia eradication, control of lymphoid leukemia through insertion of resistant genes in the chicken germline, the identification of immunogenic proteins of Marek's disease and hemorrhagic enteritis viruses, and the development of genetically engineered vaccines against these diseases. The incumbent will be responsible for all phases of a specific area best suited to his/her expertise and interest within a broad team effort. The research will be strongly oriented to provide practical solutions for current disease problems which will improve the productivity of poultry or the quality of poultry food products.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; Knowledge of (2) virology with reference to the control of poultry or animal diseases; (3) immunology, biochemistry, or molecular biology as related to animal virology; and skill in (4) handling and working with poultry or experimental animals.

Closing date: June 21, 1982.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) poultry pathology and diagnosis; (2) selected immunological techniques such as monoclonal antibody production, cell mediated immune assays or preparation and evaluation of vaccines; and skill in (3) molecular cloning of viral genes and amplification of animal proteins in bacteria through genetic engineering.

- FOLLOW DIRECTIONS FOR APPLYING ON PAGE ONE •

**ANNOUNCEMENT NO. 421-2-0073**

**POSITION TITLE, GRADE, DUTY STATION**

**PLANT PHYSIOLOGIST, GS-0435-11/12/13, Oilseeds and Cereals Research Unit, Brookings, South Dakota**

**USDA AGENCY: Agricultural Research Service**

**DUTIES:** Position located in the Oilseeds and Cereals Research Unit, Brookings, South Dakota. Position is part of a long-term fundamental research program designed to increase productivity through improved biological efficiency of crop plants growing in stress environments. Incumbent responsible for basic and applied biochemical aspects of the Unit's research on corn, oilseeds, and barley with particular emphasis on stresses due to drought, temperature and corn rootworm damage. Specific objectives of research include: (1) develop creative research program to improve understanding of growth of plants under stress; (2) develop and adapt procedures for identifying and quantifying physiologically active compounds or groups of compounds associated with reaction to stress; (3) define biochemical conditions limiting fruiting, seed set, development and yield under normal and stress conditions; (4) relate genotype to biological functions important for crop productivity and stress reaction through cause-and-effect biochemical relationships; (5) elucidate cellular processes at chemical, enzymatic, organelle, and cellular levels in relation to gene expression under normal and stress conditions. In cooperation with plant scientists and entomologists, develops suitable analytical and preparative techniques including all types of chromatography, electrophoresis, and spectrometry plus enzyme assays, cell fractionation studies, and other methods to investigate biochemical entities in plants that relate to stress damage and survival in these zones.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; (2) knowledge of plant biochemistry.

Candidates must be available by December 31, 1982.

Closing Date: June 30, 1982

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) preparative and analytical techniques for plant cells, enzymes, and other subcellular components; (2) advanced chromatographic, electrophoretic, and other chemical separation techniques; (3) modern techniques of analytical spectroscopy; (4) organic synthesis or structure determination; (5) radioactive tracer techniques; and (6) statistical methods.



**ANNOUNCEMENT NO. 421-2-0074**

**POSITION TITLE, GRADE, DUTY STATION**

**INTERDISCIPLINARY: MICROBIOLOGIST/RESEARCH PHYSIOLOGIST (ANIMAL), GS-403/413-11 or 12, Avian Leukosis Research, East Lansing, Michigan**  
TERM, not to exceed 2 years

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The incumbent is responsible for conducting original investigations on methods of introducing genes in the germine of chickens. Specifically, the incumbent will have responsibility for initiating and conducting phases of a multidisciplinary effort on germine integration. His/her specific research will be aimed at determining methods of infecting germine cells with a retroviral vector. The initial work will focus on trying to determine if isolated primordial germ cells, or very early embryos can be infected with a retrovirus and then develop into viable progeny that carry and express retroviral genes. Subsequently, work will be aimed at demonstrating the inheritance of these genes, and using collaboratively developed vectors to introduce non-retroviral genes into the germine.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) animal virology and/or reproductive physiology; skill in (3) handling and working with poultry or experimental animals; and (4) performing biological or microbiological laboratory procedures.

This is a Research Associate position.

Closing Date: June 21, 1982

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) animal genetics and (2) molecular biology of animals or animal viruses.

**ANNOUNCEMENT NO. 421-2-0075**

**POSITION TITLE, GRADE, DUTY STATION**

**MICROBIOLOGIST, GS-403-11/12, Food Sciences Research, Raleigh, North Carolina**

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The incumbent is responsible for developing a relevant program in fermentation microbiology of vegetables and has direct or supervisory responsibilities in such areas as: (1) isolation, selection, maintenance, adaptation, and modification of lactic acid bacteria and yeasts used in fermentations; (2) determination of optimum chemical and physical conditions for fermentations; (3) identification and/or characterization of spoilage microorganisms and determination of methods for their attenuation or exclusion. The microbiologist cooperates with other scientists to determine end products of fermentations, hydrolytic enzymes produced by spoilage microorganisms and methods for their control, and organoleptic and nutritional properties of products.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) lactic acid bacteria and yeasts; and (3) food science.

Candidates must be available by December 1, 1982.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) microbial genetics; (2) plant anatomy and pathology; and skill in (3) isolating, identifying, adapting, and modifying bacteria and yeasts for use in food fermentation; and (4) the use of microscopic instruments to include scanning.

• FOLLOW DIRECTIONS FOR APPLYING ON PAGE ONE •

**ANNOUNCEMENT NO. 421-2-0076**

**POSITION TITLE, GRADE, DUTY STATION**

**RESEARCH HORTICULTURIST, GS-437-11 or 12, Crops Pathology Research, Davis, California**

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** Incumbent is responsible for planning and conducting a rootstock and cultivar improvement program for English walnut. Research will focus on five elements: (1) breeding of improved rootstocks, (2) breeding of improved cultivars, (3) inheritance studies, (4) development of improved breeding systems, and (5) improved methods of mass propagation for selected clones. Within this framework, the incumbent will evaluate sources of diverse germplasm for horticultural traits associated with tree growth, nut yield, nut quality and for resistance to the black-line disease; hybridize selected germplasm sources with the objective to develop improved rootstocks and improved cultivars; screen for disease resistance under both controlled conditions and in the field; evaluate selected clones that have commercial potential as rootstocks or as cultivars with emphasis on disease resistance, nut yield and quality characteristics; and conduct genetic studies on important horticultural characteristics.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) plant breeding techniques, to improve horticultural characteristics and resistance to diseases; (3) plant genetics, as associated with such traits as tree growth, nut yield, nut quality, etc.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: knowledge of (1) techniques for screening trees for their relative resistance to plant pathogens, (2) tree growing techniques in controlled conditions, i.e., growth chambers and greenhouses; and (3) skill in tissue culture techniques.



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| <p><b>ANNOUNCEMENT NO. 421-2-0077</b></p> <p><b>POSITION TITLE, GRADE, DUTY STATION</b><br/>MICROBIOLOGIST, GS-403-11/12<br/>Biting Fly and Cattle Grub Research<br/>Kerrville, Texas</p> <p><b>USDA AGENCY:</b> Agricultural Research Service<br/>TERM, Not to Exceed 2 Years</p> <p><b>DUTIES:</b> As a Research Microbiologist, the incumbent is a member of the Biting Fly Cattle Grub Research Unit, at the U.S. Livestock Insects Laboratory, Kerrville, Texas. The incumbent will conduct a program of basic molecular biological research on the genetics and indigenous plasmids of strains of <i>Bacillus thuringiensis</i>, which have been identified as important in the biological control of arthropod pests of livestock. Specifically, the incumbent would survey the plasmids of various entomopathogenic strains and identify genetic markers (e.g., toxin production, antibiotic resistance) associated with identified plasmids so that individual plasmids may be followed in future transformation and recombinant efforts.</p> <p><b>MINIMUM QUALIFICATIONS:</b> (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) bacterial genetics; and (3) biochemical metabolism.</p> <p>This is a Research Associate position.</p> <p>Candidates must be available immediately.</p> <p><b>THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED</b> to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) plasmid DNA isolation and identification; (2) recombinant DNA techniques; and (3) biological control of arthropod pests of livestock.</p> | <p><b>ANNOUNCEMENT NO. 421-2-0078</b></p> <p><b>POSITION TITLE, GRADE, DUTY STATION</b><br/>SOIL SCIENTIST, GS-470-11/12<br/>Soil and Crop Management Research<br/>Bushland, Texas</p> <p><b>USDA AGENCY:</b> Agricultural Research Service</p> <p><b>DUTIES:</b> The incumbent is a Soil Scientist in the Soil and Crop Management Research unit at the Conservation and Production Research Laboratory, Bushland, Texas. The incumbent's specific objectives are to (1) use knowledge of soil physics to devise and evaluate practical procedures for improving water infiltration into the slowly permeable soils and for decreasing evaporation of soil water; (2) use knowledge of water flow theory to evaluate the effects of various soil factors on yield and water use by the crops; (3) evaluate and model soil, climate, and root growth influences on evapotranspiration, crop growth, and yield prediction of water deficits during development stages, and the response to water management regimes.</p> <p><b>MINIMUM QUALIFICATIONS:</b> (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) soil physics.</p> <p>Candidates must be available immediately.</p> <p><b>THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED</b> to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) statistical analysis; (2) irrigation science; and skill in (3) soil-plant-water-climate interrelations on crop growth and yield.</p> | <p><b>ANNOUNCEMENT NO. 421-2-0079</b></p> <p><b>POSITION TITLE, GRADE, DUTY STATION</b><br/>RESEARCH AGRONOMIST, GS-471-11/12/13<br/>Beef Cattle Research<br/>El Reno, Oklahoma</p> <p><b>USDA AGENCY:</b> Agricultural Research Service</p> <p><b>DUTIES:</b> This assignment is in the Oklahoma-Texas Area at the Southwestern Livestock and Forage Research Station, El Reno, OK. The incumbent conceives, designs, conducts and reports independent research to characterize the effects of plant and soil management practices on the agronomic and nutritional value characteristics of forages. The incumbent also takes an active role in initiating cooperative studies to incorporate improved forages into comprehensive year-round grazing programs. In this aspect of the work some emphasis will be placed on incorporation of legumes to replace nitrogen fertilizer and increase forage quality.</p> <p><b>MINIMUM QUALIFICATIONS:</b> (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) plant physiology related to nutrient utilization and forage quality; and skill in (3) coordinating the effects of plant and soil management techniques on the nutritional value of forages.</p> <p>Candidates must be available immediately.</p> <p><b>THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED</b> to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) biochemistry; (2) forage crop production; and (3) ruminant nutrition.</p> |
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• FOLLOW DIRECTIONS FOR APPLYING ON PAGE ONE •



**ANNOUNCEMENT NO. 421-2-0080**

**POSITION TITLE, GRADE, DUTY STATION**  
PLANT PHYSIOLOGIST, GS-435-12/13  
Soil and Water Conservation Research  
Meslaco, Texas

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The incumbent conducts independent research and is a member of the unit's team of scientists and engineers, with the responsibility to identify, define, plan, organize, and conduct research to fulfill the unit's mission and objectives. The incumbent's research objectives are to: (1) study the relation of leaf reflectance with ultrastructural differences of nonstressed and temperature and drought-stressed plants; (2) conduct basic research on effects of chemicals on plants at their molecular and cellular levels--biochemically and ultrastructurally; (3) use basic findings from the plant bioregulator research to enhance crops' stress endurance, define effects on radiation properties, and increase crop production; (4) consult and cooperate with Area USDA and other agency researchers on applications of chemical plant bioregulators to alleviate drought and temperature stresses of crops and to measure their effects on light radiation, particularly photosynthetically active radiation, as affected by different plant leaf and plant canopy conditions.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) biochemistry; (3) histology; (4) plant biochemical processes; and (5) electron microscopy.

Candidates must be available immediately.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) plant spectral radiation; (2) plant growth and development; and skill in (3) use of bioregulators.

**ANNOUNCEMENT NO. 421-2-0081**

**POSITION TITLE, GRADE, DUTY STATION**  
ECOLOGIST, GS-408-13/14  
Soil and Water Conservation Research  
Meslaco, Texas

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The incumbent conducts independent research and is a member of the unit's team of scientists and engineers, with the responsibility to identify, define, initiate, develop, and conduct research to fulfill the unit's mission and objectives. The incumbent's research objectives are to: (1) identify and evaluate environmental factors that affect plant phenology and production; (2) formulate, test, and evaluate range-land management methods; (3) determine the major sources of variance and their importance in multispectral scanner and thematic mapper digital values of crops' reflected solar radiation to develop efficient sampling methods; (4) develop and test new classification methods for multispectral scanner and thematic mapper digital values on crop and range plants; (5) devise new research techniques to solve scientific computing problems, and organize and supervise their solutions; and (6) consult with and advise laboratory researchers in team efforts on ecological-type problems that require unusual sophisticated statistical analyses for solution.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) plant ecology; and (3) plant physiology.

Candidates must be available immediately.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) statistical analysis; (2) experimental design; (3) digital image processing and computer simulation; (4) vegetation analysis; and skill in (5) developing and improving remote sensing techniques.

**ANNOUNCEMENT NO. 421-2-0082**

**POSITION TITLE, GRADE, DUTY STATION**  
RESEARCH ENTOMOLOGIST, GS-414-11, 12, or 13, BARC,  
Insect Identification and Beneficial Insect  
Introduction Institute, Systematic Entomology  
Laboratory, Washington, D.C.

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The research emphasis will be on the systematics of flies in the families Simuliidae, Ceratopogonidae, Tabanidae, and Psychodidae of importance to man and animals. Assignment includes identifications of adults and immature stages of two-winged flies of several families including: Psychodidae (sand flies, moth flies), Ceratopogonidae (biting midges), Chironomidae (midges); Simuliidae (black flies); Tabanidae (horse flies and deer flies); Stratiomyidae (soldier flies); Rhagionidae (snipe flies); and several small families of Psychodoidea, Culicoidea, and Tabanoidea. Such identifications are prerequisite to the research of other scientists and make publishable the results of their own problems of applied entomology such as biological control, ecology, and other basic and applied fields. To be responsible for curatorial management of all collections of the above-mentioned families in the U.S. National Museum of Natural History.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) Diptera systematics; and (3) evolutionary biology.

**CLOSING DATE:** May 28, 1982.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) biting flies, and (2) care and maintenance of Diptera collections.

• FOLLOW DIRECTIONS FOR APPLYING ON PAGE ONE •



**ANNOUNCEMENT NO. 421- 2-0083**

**POSITION TITLE, GRADE, DUTY STATION**

SOIL SCIENTIST, GS-470-11, 12 or 13, Plant Science Research, St. Paul, Minnesota

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The incumbent's responsibilities include development of a goal-oriented fundamental and applied research program with the primary objective being to discover soil fertility principles and practices that will lead to improved adaptation, production, and persistence of high feed quality forage legumes for use in the rations of ruminant animals. Among specific problems and areas of research that constitute the incumbent's research assignment are (1) Determine efficient soil fertility programs, based on inherent soil factors and readily measured indicators, that will enhance production and persistence of forage legumes; (2) Determine the relative efficiency of legume-based vs. nitrogen-fertilized, grass-based forage production systems in diverse areas; (3) Investigate the mineralization of nitrogen from legume residues, including the mechanism that determines the availability of this nitrogen to grasses; (4) Determine the efficiency of nitrogen-cycling in soil-plant-animal systems. Collaborative research with forage production and utilization agronomists, physiologists, geneticists, and ruminant nutritionists is inherent in this position.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) soil fertility experimentation with crop plants; (3) the methodology required for studies of fertilizer use efficiency and of dispensation of soil nitrogen; (4) the effects of soil management on erosion control and environmental quality; and (5) crop plant physiology.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) crop production and crop rotation principles; (2) culture of legumes and grasses; (3) soil chemistry; and (4) statistical procedures and experimental design.

**ANNOUNCEMENT NO. 421-2-0084**

**POSITION TITLE, GRADE, DUTY STATION**

RESEARCH PHYSIOLOGIST (ANIMAL); MICROBIOLOGIST; or RESEARCH ANIMAL SCIENTIST (PHYSIOLOGY), GS-413/403/487-13/14/15, Bushland, Texas

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The incumbent determines the influence of various pathogens on the incidence of respiratory disease in feeder calves and determines the effects of vaccination programs on the health and performance of feeder calves. In addition, the incumbent must closely coordinate the USDA program at this laboratory with the Bovine Respiratory Disease Research being conducted by the Texas Agricultural Experiment Station. The two programs are closely associated and share many of the same facilities as well as often conducting studies on the same loads of cattle. The cooperative program is also characterized by (1) the free sharing of data, (2) a general definition of primary responsibilities, and (3) co-authorship of manuscripts.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) veterinary microbiology and serology.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) bovine respiratory disease; (2) pathology; (3) immunology; and skill in (4) resource planning.

**ANNOUNCEMENT NO. 421- 2-0085**

**POSITION TITLE, GRADE, DUTY STATION**

MICROBIOLOGIST, GS-403-11, 12, or GS-403-13 Animal Parasite Research, Auburn, Alabama

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The incumbent is a microbiologist/parasitologist conducting research on biochemical, physiological and immunological aspects of host parasite relationships, with emphasis on molecular approaches. Investigations of these relationships require in-depth knowledge of microbiology and parasitology and basic knowledge of immunology, biochemistry, physiology and biostatistics. The incumbent is responsible for planning and conducting basic research which can enhance the effectiveness of the control of parasitic diseases of ruminants and/or swine. Examples of the incumbent's research areas are: a) development of model systems for the study of cues influencing site location, migration or development of parasites; b) identification of cues influencing parasite behavior and elucidation of possible approaches for blocking or interrupting these biological signals to prevent infections or to reduce their level or effects; c) characterize specific functional antigens against various animal parasites such as coccidia and gastrointestinal nematodes (*Ostertagia*, *Cooperia*, etc.) and demonstrate the ways in which the host responds to these antigens; and d) define interrelationships between parasitism, nutrition, endocrine levels and environmental stress in producing disease.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) the biochemical, physiological, and molecular aspects of animal host/parasite relationships; and (3) high-pressure, thin-layer, and gas liquid chromatographic methodologies and their application to studies in animal host/parasite interactions.

Candidates must be available immediately.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) biostatistics; and skill in (2) axenic in vitro cultivation of animal parasites and in tissue culture techniques.

• FOLLOW DIRECTIONS FOR APPLYING ON PAGE ONE •



**ANNOUNCEMENT NO. 421-2-0086**

**POSITION TITLE, GRADE, DUTY STATION**  
RESEARCH ENTOMOLOGIST, GS-414-11, 12, or 13, BARC  
Insect Identification and Beneficial Insect  
Introduction Institute, Systematic Entomology  
Laboratory, Beltsville, Maryland  
**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The incumbent is involved in systematic research and associated service responsibilities concerning thrips (Thysanoptera) and whiteflies (Homoptera; Aleyrodidae). The group includes approximately 500 species of thrips and 500 species of whiteflies in North America and 6,000 species of thrips and 1,500 species of whiteflies in the world. The general thrust of the research is to develop classifications of the thrips and whiteflies of the world, but primary emphasis is placed on thrips and whiteflies that are agricultural pests and thrips that have potential as biological control agents. Thrips and whiteflies are both proven virus vectors. Service responsibilities require identification of large numbers of species and individuals submitted by governmental agencies, by entomologists in the United States and foreign countries, by scientists studying the ecology, biology, or control of thrips and whiteflies, and by the general public. These identifications may require considerable research effort, but assignment also includes the preparation of keys and other identification aids.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; Knowledge of (2) systematics of insects, (3) evolutionary biology of insects, and skill in (4) modern systematic techniques of insects.

**CLOSING DATE:** May 28, 1982

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) systematics of whiteflies and thrips; (2) genetics; (3) aspects of biological control of insects and weeds that relate to systematics; and (4) skill in curatorial techniques for insect collections.

**ANNOUNCEMENT NO. 421-2-0087**

**POSITION TITLE, GRADE, DUTY STATION**  
PLANT PHYSIOLOGIST, GS-435-11, Plant Physiology and  
Photosynthesis Research Unit, Raleigh, North Carolina  
Temporary, Not to exceed 1 year

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** Incumbent will conduct research on the biochemical and genetic mechanisms that control photosynthetic starch/sucrose formation. Objectives are to partially purify and characterize key enzymes involved in carbohydrate metabolism such as sucrose-phosphate synthase; to correlate activities and/or regulatory properties of starch synthesizing enzymes with leaf starch accumulation; and to identify genetic variation and environmental effects on carbohydrate partitioning in agronomic species. Biochemical techniques essential to this research include chromatographic procedures, enzyme assay techniques, and kinetic analysis of data. The incumbent serves as a member of the Photosynthesis Research Unit in a broad program that is aimed toward increasing agricultural productivity through basic photosynthesis research.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) enzymology; (3) photosynthesis; and skill in (4) enzyme purification, and (5) kinetic characterization of enzymes.

This is a Research Associate position.

Candidates must be available by December 1, 1982.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: knowledge of (1) biochemistry and skill in (2) assay and characterization of carbohydrate-metabolizing enzymes; and (3) immunological quantitation of proteins.

• FOLLOW DIRECTIONS FOR APPLYING ON PAGE ONE •

**ANNOUNCEMENT NO. 421-2-0088**

**POSITION TITLE, GRADE, DUTY STATION**  
RESEARCH ENTOMOLOGIST, GS-414-11, Bioenvironmental  
Insect Control Laboratory, Stoneville, Mississippi  
Temporary, Not to Exceed One Year

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The incumbent serves as Research Entomologist within the Biological Methods for Insect Management Unit. Areas emphasized by this unit are biological control by augmentation, biological control by importation and establishment of new natural enemies, entomophage efficacy, and cultural control of Heliothis species. Emphasis of this position is on the development of specific information on the relationship between predator/parasite species and their host pests for more precise control decision making. Elucidating the ecological relationship between *Heliothis* spp. and its larval parasites is a high priority. Specifically, the occurrence of larval parasites will be determined, and selected parasites (native and exotic) will be evaluated insofar as habitat/host finding ability, host and host stage preference, impact on host feeding, capacity for increase, and dispersal capability.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) biological control of insects; and (3) insect behavior.

This is a Research Associate position.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) lepidopterous larval parasites; and skill in (2) statistical methods and computer technology.



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| <p><b>ANNOUNCEMENT NO. 421- 2-0089</b></p> <p><b>POSITION TITLE, GRADE, DUTY STATION</b><br/>RESEARCH ANIMAL SCIENTIST (NUTRITION), GS-487-12,<br/>BARC, Animal Science Institute, Ruminant Nutrition<br/>Laboratory, Beltsville, Maryland</p> <p><b>USDA AGENCY:</b> Agricultural Research Service</p> <p><b>DUTIES:</b> The position is in the Beltsville Energy Metabolism Unit. The incumbent has technical responsibility for energy metabolism research with beef cattle. Identifies factors influencing energy requirements of growing and fattening cattle. Develops means to measure and to predict energetic efficiency of tissue gain and composition of tissue gain. Has technical responsibility for operation of six open-circuit respiration chambers including associated electronic and data acquisition equipment for indirect calorimetry studies with cattle. Serves as project leader in own area of specialization and cooperates with scientists in related areas such as energy metabolism of dairy cattle, growth of young ruminants, protein metabolism, rumen microbiology, forage utilization, and meat science.</p> <p><b>MINIMUM QUALIFICATIONS:</b> (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; Knowledge of (2) beef cattle production, (3) energy metabolism, and (4) ruminant nutrition.</p> <p><b>THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED</b> to establish eligibility, will distinguish better-qualified candidates from among those eligible:<br/>Knowledge of (1) calorimetric methods, (2) physiology, (3) biochemistry, (4) metabolic control system, (5) mathematical modelling and statistics, and (6) electronics and data acquisition systems.</p> | <p><b>ANNOUNCEMENT NO. 421- 2-0090</b></p> <p><b>POSITION TITLE, GRADE, DUTY STATION</b><br/>INTERDISCIPLINARY: PLANT PHYSIOLOGIST/BIOLOGIST/GENETICIST, GS-435/401/440-11/12, Proteins Research Unit, WRRRC, Albany, California</p> <p><b>USDA AGENCY:</b> Agricultural Research Service</p> <p><b>DUTIES:</b> Incumbent is responsible for planning, reporting, and conducting investigations of factors regulating the biosynthesis of protein in wheat. These studies include a major effort to characterize the molecular biological properties of the nucleic acids of wheat, and to determine the mechanisms by which their metabolism and interactions with other cell constituents control the processes of protein biosynthesis. The incumbent will utilize recombinant deoxyribonucleic acid (DNA) technology in the analysis and amplification of storage protein genetic information and collaborate in studies of the role of ribonucleic acid (RNA) synthesizing enzymes in the control of storage protein synthesis.</p> <p><b>MINIMUM QUALIFICATIONS:</b> (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; (2) knowledge of biochemistry including nucleic acids and enzymology; and (3) molecular biology including recombinant DNA techniques; and (4) cell biology, including organelle isolation and cell tissue culture.</p> <p><b>THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED</b> to establish eligibility, will distinguish better-qualified candidates from among those eligible:<br/>Knowledge of (1) plant physiology; and (2) genetics.</p> | <p><b>ANNOUNCEMENT NO. 421-2-0091</b></p> <p><b>POSITION TITLE, GRADE, DUTY STATION</b><br/>SUPERVISORY SOIL SCIENTIST, GM-470-13, 14 or 15<br/>Soil and Water Management Research,<br/>St. Paul, Minnesota</p> <p><b>USDA AGENCY:</b> Agricultural Research Service</p> <p><b>DUTIES:</b> As Research Leader, the incumbent provides technical and administrative leadership to this Unit and is responsible for the development and execution of broad and complex research investigations on soil and water management with the ultimate goal of using water, nutrients, energy, and other inputs to the soil more efficiently. The incumbent conducts personal and/or team research in soil management practices for efficient use of precipitation on agricultural land, concepts and basic principles of tillage, mechanisms of soil structural formation and degradation, use of organic wastes as soil inputs, tillage-fertility interactions, soil water use and recharge, climatic and soil factors involved in soil-plant-water relations, and computer modeling of integrated soil-plant-water systems. The incumbent maintains close liaison with the Soil Conservation Service, state agencies involved in soil and water management, other Federal agencies, and officials of cooperative universities and state experiment stations.</p> <p><b>MINIMUM QUALIFICATIONS:</b> (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; Knowledge of (2) soil physics and/or soil chemistry; and (3) plant and soil science related to soil-plant-water relations.</p> <p><b>THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED</b> to establish eligibility, will distinguish better-qualified candidates from among those eligible:<br/>Knowledge of (1) statistical procedures and experimental design; (2) applying computer modeling techniques to soil-plant-water relations; skill in (3) coordinating cooperative research efforts; and ability to (4) plan and organize a research program.</p> |
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• FOLLOW DIRECTIONS FOR APPLYING ON PAGE ONE •



**ANNOUNCEMENT NO. 421-2-0092**  
**POSITION TITLE, GRADE, DUTY STATION**  
Research Physiologist, GS-413-11, Insect Physiology  
Research, Gainesville, Florida  
TEMPORARY, not to exceed 1 year

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The specific assignment of the incumbent of this position is to investigate the physiological and biochemical events responsible for storage protein uptake from the hemolymph by larval fat body of the greater wax moth. This work will focus on determining the molecular mechanism of storage protein uptake and its regulation by hormonal secretions. Initial emphasis will establish if uptake is a receptor-mediated process based on recognition of carbohydrates attached to the proteins. This study will be coordinated with ongoing studies of hormonal regulation of protein uptake. The incumbent will prepare and present the experimental results of this study in appropriate scientific journals and scientific meetings. Within the assigned area of research the incumbent is responsible for planning and coordinating studies with ongoing research by other team members. Consultation with and technical guidance of other workers is expected from the incumbent within this specialized area of expertise.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) animal physiology and insect endocrinology; (3) biochemistry and biochemical techniques; and (4) skill in isolating and analyzing carbohydrates from glycoproteins.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Skill in (1) culturing insect tissues for assessment of metabolic activities; (2) microsurgical techniques for removal of tissues from insects; and (3) isolating and purifying proteins from animal tissues.

**ANNOUNCEMENT NO. 421-2-0093**  
**POSITION TITLE, GRADE, DUTY STATION**  
RESEARCH ENTOMOLOGIST, GS-414-11/12 or GM-13, Bee Breeding and Stock Center Laboratory, Baton Rouge, Louisiana

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** Incumbent's specific assignment will be in two parallel areas. First, incumbent analyzes aspects of bee behavior and physiology such as queen-worker interactions and oviposition regulators as well as various weak points in the commercial production, distribution and introduction of honey bee queens. Second, incumbent serves as a full contributing member to the laboratory's "Africanized bee research team" in planning, conducting, and reporting of Africanized bee research, and the development and implementation of control and management plans for Africanized bees. Incumbent provides leadership in the queen propagation and management aspects of the Africanized bee project.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; skill in (2) collecting, interpreting, and reporting scientific data; and (3) investigating animal behavior.

Candidates must be available immediately.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) commercial procedures for production, distribution, and introduction of honey bee queens.

**ANNOUNCEMENT NO. 421-2-0038** Readvertised  
**POSITION TITLE, GRADE, DUTY STATION**  
RESEARCH ANIMAL SCIENTIST (NUTRITION), GS-0487-11/12/13  
Production Systems Research, Clay Center, Nebraska

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The incumbent serves as a research nutritionist in the multidisciplinary Production Systems Research Unit at the Roman L. Hruska U.S. Meat Animal Research Center, Clay Center, Nebraska. The incumbent provides leadership for the assimilation of technological advances from other disciplines involved in life cycle beef and sheep production; and in the integration of this information to evaluate, through systems analysis procedures, the biological and economic efficiency of alternative production systems. Specific assignments of the incumbent include: (1) As member of a team, the incumbent will conduct research in the development of simulation model(s) for cattle and/or sheep production systems with emphasis on forage utilization. (2) Conduct grazing trials to study the relationships between animal productivity and forage quality and availability for the purpose of optimizing animal production efficiency on pasture. (3) Conduct research in the broad area of ruminant nutrition. This includes the identification of variables which affect the rates of rumen digestion, fermentation and passage, as related to forage quality and intake.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) ruminant nutrition; (3) forage production and utilization by livestock; and (4) skill in the use of scientific computer languages.

Closing date: May 21, 1982

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) mathematical modeling and systems analysis of livestock production systems or animal biology; (2) fiber analysis and in vitro digestion techniques; (3) animal production; and skill in (4) statistical methods.

• FOLLOW DIRECTIONS FOR APPLYING ON PAGE ONE •



**ANNOUNCEMENT NO. 421- 2-0057** Readvertised

**POSITION TITLE, GRADE, DUTY STATION**

RESEARCH AGRONOMIST, GS-471-11/12, GM-471-13,  
Crop Production Research, Columbia, Missouri

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** This position is located in the Crop Production Research Unit, Mid-Great Plains Area, Columbia, Missouri. Incumbent is responsible for conducting a basic and applied research program to develop pasture systems for year-round dairy and beef cattle feedings. Research emphasis will include characterization of morphological, physiological, and biochemical development of forages as related to yield, forage quality, persistence, and utilization by livestock; development of improved establishment and management practices for both cool- and warm-season forages; and identification of plant factors which may be used as selection criteria for improved animal performance. Specifically, incumbent is expected to evaluate forage species and management practices designed to provide year round forage and/or pasture, and to evaluate nutritional and agronomic characteristics of forage legumes as components of grass-legume pasture mixtures. Incumbent's research is expected to improve production from pasture-livestock systems by defining interrelationships of plant-animal-soil-environmental factors associated with plant-animal complex.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) pasture management; and (3) ruminant nutrition.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) plant physiology; (2) plant ecology; and (3) statistics on experimental design.

**ANNOUNCEMENT NO. 421-2-0058** Readvertised

**POSITION TITLE, GRADE, DUTY STATION**

SOIL SCIENTIST, GS-470-11 or 12, BARC, Agricultural  
Environmental Quality Institute, Pesticide  
Degradation Laboratory, Beltsville, Maryland  
TEMPORARY, Not to Exceed 1 Year

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** Major duties involve soil preparation and characterization; preparation and purification of solutions containing carbon-14 labeled organic chemicals; analysis of chemical form and distribution in soil and solution phases during adsorption and desorption experiments; construction, mathematical analysis, and interpretation of sorption isotherms; statistical analysis of data; modeling movement in soils based on adsorption data; and modeling adsorption behavior based on chemical parameters. Chemical analytical techniques involve use of liquid scintillation counting, chromatography, or other methods as needed. Design, modification, and/or fabrication of specialized laboratory equipment as needed. In consultation with the supervisor, determines the approach, methods, and procedures to use; and schedules individual experiments. Modifies methods and procedures as necessary to solve specific scientific problems. Calculates results, prepares summary tables and figures, and makes recommendations for further testing.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) soil chemistry; and (3) chemistry.

**CLOSING DATE:** June 14, 1982.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) soil physical chemistry; and skill in (2) statistical analysis; and (3) soil and chemical interaction modeling.

**ANNOUNCEMENT NO. 421- 2-0061** Readvertised

**POSITION TITLE, GRADE, DUTY STATION**

SUPERVISORY SOIL SCIENTIST, GS-470-13/14/15  
Soil and Water Management Research Unit  
Sidney, Montana

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** Incumbent serves as a Research Leader, responsible for planning, organizing, coordinating, reviewing and reporting the financial and technical aspects of the research conducted at the Northern Plains Soil and Water Research Center. Studies focus on various projects involved with the protection of rangelands, cultivated drylands and irrigated lands in the Northern Great Plains. Incumbent also conducts individual research in soil erosion/productivity and crop residue management on dryland spring and winter wheat fallow systems. The incumbent will have complete authority to discuss his/her research and that of the research unit, with scientists in the Agricultural Research Service, State and other cooperative agencies; farmer groups and educational institutions; and with representatives of foreign countries and other parties interested in soil and water conservation research.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) soil and crop management methods, procedures, and techniques to maintain and improve soil and enhance crop production; (3) protection techniques of rangelands, cultivated drylands, and irrigated lands; and (4) resource management.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) hydrology; and (2) range management.

• FOLLOW DIRECTIONS FOR APPLYING ON PAGE ONE •



**ANNOUNCEMENT NO. 421-2-0063 Readvertised**

**POSITION TITLE, GRADE, DUTY STATION**  
RESEARCH PHYSIOLOGIST (Animal), GS-413-11/12  
Beef Cattle Research  
El Reno, Oklahoma

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** Incumbent conceives, designs, conducts, and reports independent research to characterize the effects of weaning and transportation stress on growth and performance of growing beef cattle and takes an active role in initiating cooperative studies to evaluate various management programs designed to reduce stresses associated with the assembly and movement of calves into the Southern Great Plains. Also conducts basic and applied research using the latest hormone analysis procedures (radioimmunoassays), to establish an understanding of the endocrinology of stress and more specifically the relationships between stress and the incidence of respiratory disease in stocker/feeder calves.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) animal physiology research in animal response to stress; and skill in (3) handling livestock

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) experimental design and statistics; and (2) hormone analysis by radioimmunoassay.

**ANNOUNCEMENT NO. 421-2-0064 Readvertised**

**POSITION TITLE, GRADE, DUTY STATION**  
ECOLOGIST, GS-408-11/12  
Range and Pasture Research  
Woodward, Oklahoma  
TEMPORARY, Not to Exceed 1 Year  
**USDA AGENCY:** Agricultural Research Service

**DUTIES:** The incumbent is an active member of a group of range scientists, soil scientists, weed scientists, and engineers at the Southern Plains Range Research Station who are conducting interdisciplinary research on a wide array of range problems in the Southern Plains. Specifically, the objective of the incumbent's research is to modify/parameterize existing ecological models for range forage grasses to form a single forage species environmental response and seasonal growth dynamics simulator. This model will be validated and, then, used to select and define biologically sensitive parameters related to climate and site factors. Model and parameter interaction will be used to generate optimum mixes of these key parameters that will maximize or minimize predetermined selection factors consequent to a variety release. Parallel evaluations will validate physiological screening techniques based on these same parameters to identify potential superior genotypes and outline necessary field tests.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) range systems modeling to include the interaction of grazing animal, forage plant, and environment.

This is a Research Associate position.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) statistics, mathematics and computer science; and skill in (2) quantitative description of soil, plant, and animal interaction.

• FOLLOW DIRECTIONS FOR APPLYING ON PAGE ONE •

**ANNOUNCEMENT NO. 421-2-0067 Readvertised**

**POSITION TITLE, GRADE, DUTY STATION**  
SUPERVISORY RESEARCH ENTOMOLOGIST (RESEARCH LEADER), GS-414-13/14, Bioenvironmental Insect Control Laboratory, Stoneville, Mississippi

**USDA AGENCY:** Agricultural Research Service

**DUTIES:** Incumbent serves as Research Leader of Soybean Insect Management Research. An area emphasized by this unit is research population ecology of key pests for use in developing predictive technology. In-depth studies are conducted to determine the effects of weather, natural enemies, and control options on basic pest biology and population dynamics under various crop production methods. Along with construction of pest life tables and effective monitoring techniques, the unit combines optimum pest management strategies within the various soybean production practices, thereby enhancing predictive capability. Evaluation of new insecticides, miticides, biological agents, and insect and plant growth regulators for control of soybean pests is a responsibility of this unit. The incumbent's personal assignment is the development of monitoring (sampling) and predictive technology for occurrence of key pests in soybeans, which will require indepth knowledge of population dynamics of soybean arthropod pests.

**MINIMUM QUALIFICATIONS:** (Only applications providing evidence of the following will be eligible for consideration): (1) Academic and/or professional experience as specified in Announcement No. 408 and/or Announcement No. 421; knowledge of (2) insect population management; and skill in (3) coordinating phases of research; and (4) in assessing insect population dynamics.

Candidates must be available by October 1, 1982.

**CLOSING DATE:** June 1, 1982.

**THE FOLLOWING QUALIFICATIONS, WHILE NOT REQUIRED** to establish eligibility, will distinguish better-qualified candidates from among those eligible: Knowledge of (1) ecological and applied entomology; (2) arthropod fauna and sampling in field crops, particularly soybeans; and skill in (3) computer-based systems analysis; and (4) interacting with scientists and industry.

